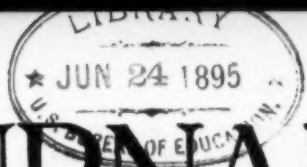


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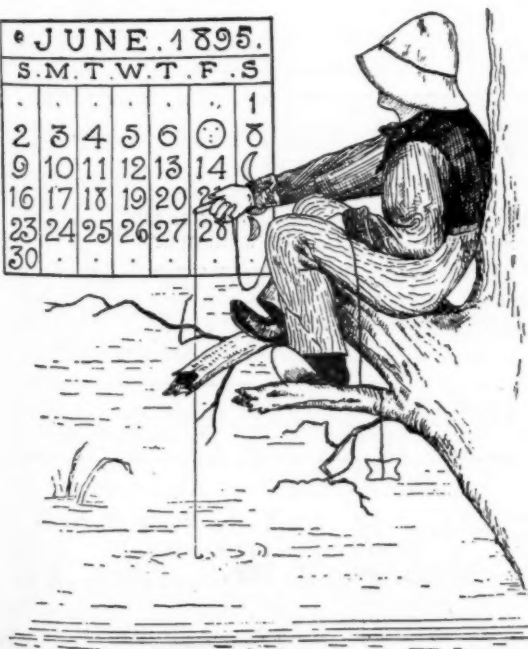
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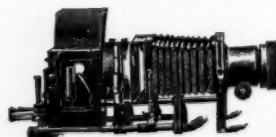
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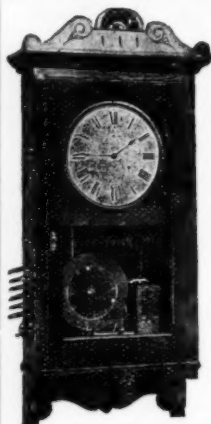
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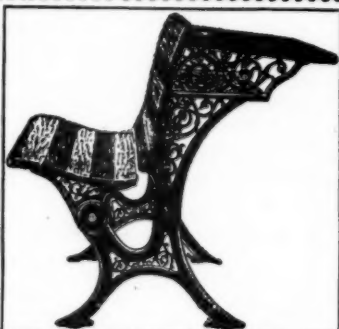
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# THE SCHOOL JOURNAL

A Weekly Journal of Education

Vol. L.,

For the Week Ending June 22

No. 25

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All letters relating to contributions should be addressed plainly, "Editors of SCHOOL JOURNAL." All letters about subscriptions should be addressed to E. L. KELLOGG & Co. Do not put editorial and business items on the same sheet.

## Some Questions.

All teachers make it a part of their daily business to propose questions to their pupils: they measure the knowledge their pupils have obtained and judge of their mode of thinking by proposing questions. The person who is aiming to do genuine work in any sphere will often examine himself as well as the results obtained, for, as he thinketh, so does he stamp his work.

In teaching there are two elements, the teacher and the pupil; the pupil may be considered in two relations, as to his knowledge and his culture; these are three lines to pursue. Here are some of the questions the thoughtful teacher will probably daily ask himself.

### THE TEACHER.

1. What is the spirit with which I undertake this work?
2. No matter how much teaching is belittled and undervalued by the world in general does it stand before me as the highest work in which man can engage?
3. Do I attempt to do my work as a co-laborer with the Creator, as representing him?
4. As the Creator is evidently aiming at causing his kingdom to come on earth, am I trying to find out the principles on which he operates so that I may apply them in the work I have undertaken?
5. Do I meet my pupils as one that seeks their highest good?
6. Are they sure that my inner self is for the highest, the noblest, the purest?
7. Do I set them an example of unflagging effort for advancement?
8. Am I the same to them as I was last year, just as a statue would be, or am I growing in their sight as they are growing in mine?
9. Is my personal bearing in the school-room what I would have them copy?
10. Do I set them a just example in personal neatness.
11. Are they sure of my sympathy in their efforts?
12. Is the one who has tried and failed sure that I esteem him as much as the one who has succeeded?
13. Do I keep ever in mind that word-repetition does not necessarily imply understanding?
14. Do they obtain glimpses day by day of the beautiful in human conduct?
15. Do they feel they are responsible to their Creator, to the public, to the school authorities, as well as to me?
16. Do they obtain from me the feeling that it is most

desirable to acquire a part of the vast stores of knowledge that exist?

17. Do I make the school-room an attractive place?
18. Are they sure I am certain to be just in my dealings with them?

### THE PUPILS.

1. Are my pupils courteous to me and to each other?
2. Do they respect my person, office, and authority?
3. Are neatness and cleanliness firmly impressed on them as important qualities?
4. Have they industrious habits? Is industry a fixed habit?
5. Do they do their work in a systematic manner?
6. Are they evidently observant of the rights of others?
7. Are they self-controlled?
8. Are they honest in their study, their recitations, their dealings?
9. Have they fixed upon a model or standard for conduct?
10. Have they evidently decided (at least a majority) to do right at all hazards?
11. Do they make an understanding of what they are learning the object of their study?
12. Are the habits they are forming those that will remain with them after they have left school.
13. Is their work, such as drawing, map-drawing, etc., done with neatness and with effort for elegance, or are the blackboards covered with eye-paining scrawls?
14. Are they anxious to go on with their education, or would they prefer to leave school?
15. Do they give at home and to the public attractive accounts of the school-room work. That is, is the report they make of what is done in the school-room such as gives the public a high opinion of the school?
16. Are they examples to the public of the advantages of education?
17. Have they come to have a sacred regard for duty?

### THE STUDIES.

1. Is the knowledge they are obtaining that which human beings ought to obtain?
2. Do they have clear ideas of their own immediate surroundings? The world immediately before and around them?
3. Do they continue that knowledge of themselves begun in the home, as to cleanliness, carriage of the body, proper clothes, personal development, bearing towards others, etc., etc.?
4. Do they make attainments in a knowledge of the visible earth, the plants, animals, atmosphere, temperature, etc.
5. Do they investigate of themselves the qualities, usefulness, etc., of the various objects that come into their hands, as the inkstand, the knife, the slate, the chair.

6. Do they enlarge their ideas of their companions, their friends, their neighbors, the people about them, so as to form some clear and general conception of man?

Have they become users of good language? Do they love the beautiful thoughts of the poets? Are they ready to express themselves in language? Have they a taste for reading the right sort of books?

8. In the use of numbers do they recite the tables in a mechanical way? When they say "three times four" for example, do they know what represents in reality such an expression?

9. Have they obtained settled principles concerning their duty to each other and to you, or do they do what they do because they must, rather than because they ought?

11. Will the studies you have put before them make them happier, more successful in life, and will it make them agreeable as sons and daughters, or as citizens?

## Handicraft.

By IRMA T. JONES.

Ignorance is the mother of prejudice. Opposition to manual training as a part of the curriculum of the public school often results from a failure to apprehend what it is and what it aims to do for the youth taught. Especially is this true of what is termed *sloyd* for want of a better name.

America is indebted to Sweden for the word, and for the system which it represents. Singularly the hand of a woman brought to our shores this increasingly valuable contribution to popular education. Literally *slojd*, or preferably *sloyd*, derived from the Icelandic, means dexterity or skill, but secondarily it stands for the training which aims to render hand and eye and judgment dextrous. It does not teach trades, nor does it include iron and metal working. With wood, usually the cheapest of materials, and with carefully selected tools, *sloyd* applies or develops the knowledge of form taught in the kindergarten, in a systematic and logical order by the manufacture of useful products. Every mechanic knows that all structures, however elaborate or costly, are evolved by a combination of very simple processes, according to well-known and fixed principles. He knows, too, that the trained eye and hand can adapt these principles in a multitude of ways.

There is in Sweden a distinct class known as *sloyders*, whom we would call jacks of all trades, as they are able to do various odd jobs about a house, fitting doors, shelves, locks, repairing broken furniture, and many other things in the interest of comfort and economy.

Not more than a dozen years have passed since the valuable results of manual training in the public schools of Sweden attracted the attention of American educators, particularly of those who began to realize that something is needed to supplement the good results of the kindergarten.

Marie Topelius, seeking an opportunity to teach *sloyd*, arrived from Sweden at an opportune moment. No argument was needed to show that here at last was the missing link between the primary kindergarten and the advanced manual training schools and polytechnic institutes already established. It was already evident that for want of that link many benefits derived from the kindergarten were being lost before the training school age arrived, while the elaborate and expensive outfit required for the latter rendered it an impossible adjunct of the ordinary public school.

Moreover, thoughtful minds were seriously asking the question, "Is the present form of education which ignores the hand and the eye best calculated to fit the child for a useful career in life?" Again they saw that "It is more natural for a boy to be able to draw a sphere or to make one out of wood or clay than to un-

derstand the geometrical definition." The way was thus prepared for the adoption of the system in America. As early as 1882 *sloyd* had been made a compulsory part of the public school curriculum in France. England has followed her rival's example. Sweden shows remarkable results in the influence of manual training upon the character and thrift of her laboring classes. Russia, Denmark, Finland, Germany, Belgium, and Italy are also incorporating it as a part of their school systems.

The coming of Miss Topelius and her sister mark an era in the history of manual training in the United States. For some reason it became more readily appreciated in Chicago than elsewhere, and that city was the principal, if not the only, point where instructors could be trained. But to-day, Boston stands unrivaled in the facilities afforded for acquiring a thorough knowledge of *sloyd* under the enthusiastic lead of Gustav Larsson, of the Appleton street school. New York, Pittsburg, and many towns in Pennsylvania and in some of the Western states have one or more *sloyd* instructors in their public schools.

In the words of the French minister of education, "The love for work can only come through the habit of working, and reciprocally the habit of work can only come by implanting the love of it." To evolve skill and a love of labor from a child's inner consciousness without permitting the experience of some specific work is as impossible as to have well-nourished bodies on a diet of pickles and cake. Nor is it reasonable to lay the foundations of an educational superstructure in the kindergarten and then wait until these foundations are half obliterated before continuing the building.

So naturally do the principles and methods of *sloyd* follow kindergarten instruction that it practically solves the problem of manual training for the intermediate grades of the public school. By means of its easy graded steps, its admirable system of logical sequences in wood, the Froebel idea of evolving instruction by doing is continually applied during the period when the growing life and intellect of the child is most susceptible to influence.

No extended argument is needed to prove the desirability of increasing the practical element in education. Everywhere the cry is heard for something which will better equip one for the struggle of earning a livelihood. The taxpayer does not care to pay for teaching various trades, but he does demand with much reason that the knowledge taught in the public school shall be fundamental and utilitarian in character.

It is argued in favor of *sloyd* that it is so arranged and graded as to be adapted to the capacity of the average child. Also that it so excites and sustains interest that attention and progress are assured. It is also noticeable that the child's interest increases with each session. The fascination of creation becomes a constant and growing pleasure. Boys and girls attending the *sloyd* classes have frequently been known to forsake the playground and stand many minutes in a broiling sun waiting impatiently for the lesson hour. The wayward forget to be bad, and the question of school discipline resolves itself into self-government while the active energies of the class are expended in making things, rather than in attempting to memorize words and phrases which signify nothing to the immature mind.

Again, the objects made are useful, and the principles underlying their construction of universal application. The joy of seeing positive results of one's toil in a finished and perfect copy of his model is ecstasy, even to a child of dull perception.

It is often asserted that the tendency of the ordinary school curriculum is to diminish respect for manual toil. *Sloyd*, on the other hand, teaches the pupil to see honor in perfect work, and develops respect for rough bodily labor. Habits of order and neatness are formed unconsciously by the training received from day to day in an industry which allows personal cleanliness. This last feature is a decided advantage as compared with the work of a forge or molding room.

Of still greater value are the sense of form and general dexterity of hand which are to be gained from sloyd. "It interprets the world to the pupil, and makes a man of the milk-sop." Its course of study is susceptible, of unlimited variety, and easily adapted to the needs and conditions of school life. Sloyd "makes a powerful link between home and school, and where the pupil is under ill-advised influence out of school, it corrects this influence."

As a partial substitute for physical culture, sloyd enhances the pupil's zest for his book studies, under the stimulus of quickened and healthful circulation and nutrition. It not only renders the child self-helpful, but it whispers in his heart, "Help your neighbor."

Still another argument in favor of the adoption of this form of manual training into the public school curriculum is that an elaborate and expensive outfit is not required. It is surprising to learn what may be accomplished with a very few hundred dollars under the direction of a capable instructor. The greatest expense after providing a suitable room is the salary of the teacher. As demand outruns supply good salaries are the rule.

Industrial drawing is often made a part of the duties of the sloyd instructor thus lessening expense. Considering the physical, moral, and even commercial benefits accruing from manual training, what sufficient reason can there be for not making this valuable and eminently useful training a part of every child's education?

The hand, the eye, and the judgment, are the stock in trade of the great mass of the race; unless they are trained for life's duties, misery must result. "The world needs to have its hand-workers become head-workers, and its head-workers become hand-workers." Knowledge takes the sting from toil, and lightens drudgery. If they knew the "things which make for their peace," our toiling millions would rise and assert the right of every child to its share of manual training.

## Ambidexterity and Vertical Penmanship.

By JOHN JACKSON.\*

Some surprise may be caused by my advocacy of ambidexterity in handwriting. This principle cannot be too strongly emphasized as one of the most valuable elements in a system of hygienic penmanship.

About three years ago, in commenting on the proceedings of the Congress of Hygiene and Demography held in London, when a resolution in favor of upright penmanship and its universal adoption was unanimously passed, the *Lancet* had the following remarks:

"The number of muscles put in action when a person is writing is prodigious, and it is probable that in beginners every muscle of the body must yield its assent before the graphic symbols trickle from the pen. The great drawback of writing as an exercise for children is the fact that it involves one-half of the body only, and the necessity of fixing the spinal column causes the child instinctively to loll upon its left side while the right arm is working. To what extent the asymmetry of posture is caused by the fashion of sloping the letters it would be difficult to say. . . . The true remedy for the evils produced by learning to write seems to us to be to teach the child to use both hands, and to practice alternately with either hand. . . . Vertical writing lends itself more readily to ambidexterity than does sloping writing, and there can be no doubt that a clerk who could write with equal facility with either hand, and could rest one side of the body while the other was working, would be little liable to writer's cramp and similar troubles."

These sentiments have been confirmed in the more recent pronouncements of specialists in nervous dis-

orders, and of others who have given most careful attention to the subject. It is well known that scrivener's palsy or writer's cramp is caused by excessive use of the muscles engaged in the act of writing. It is also generally known that the victims to this serious malady are drawn almost exclusively from the ranks of the obliquely writing community. Whether this results from the fact that the great majority of our people were and are sloping writers, or (as medical and other authorities declare) from the injurious effects of slanting the writing at all, it is not for me to say; but I do know that vertical writing is actually the only hygienic system, and that it does not induce the disease above referred to, as witness the typical case where a sufferer from the cramp fully recovered after abandoning the sloping style and adopting the upright.

One of the best known specialists in nervous disorders writes just recently on this very question, and gives as his opinion, founded on the observation and treatment of a large number of cases, that vertical writing must be used if the disease is to be averted, or, as the alternative, ambidexterity must be taught and acquired. Since upright penmanship is the only method equally adapted for both hands, this is tantamount to saying: "Write vertically with one hand or both,—but write vertically, and writer's cramp will then become a matter of history."

We have here an almost irresistible argument for the universal adoption of vertical writing, the acquiring of which is so wonderfully easy and simple, whatever the age or ability of the writer.

Then what about left-handed penmanship? Is it desirable or necessary? What are its advantages or claims? Surely the quotation from the *Lancet* is sufficient reply. For, first, is it not quite true that thousands—nay, tens of thousands—of persons write for very long periods—eight, ten, twelve, or even fourteen hours daily—and this often for years together? Is it not also equally true that many of these persons, quite a large number in the aggregate of these clerical machines, soon get out of order and work irregularly; whilst an alarmingly large proportion of them cease working altogether at a comparatively early stage utterly disabled? Now, if these failures result from overworked muscles—and they certainly do—it is obvious that they could be avoided if the cause of them were removed. Teach and practice left-hand writing, and the object is reached.

The clerk, copyist, or author tires his right hand, arm, etc., wearies the muscles, and deteriorates their powers, say in the first half of the day. He then has recourse to his reserve set of muscles, and for the remainder of his time the left side, hand, and arm are put into requisition, the right hand thus obtaining that rest which in no other condition could be secured. Or—assuming for the time being that both hands wrote exactly the same style—they could be alternately used several times during the day, and neither set of muscles would get strained or fatigued at all. Thus, the first great advantage to be derived from left-hand writing is the avoidance of writer's cramp—an affliction that is becoming more prevalent every year—and similar troubles; and the second advantage is reducing to a minimum the extreme weariness consequent upon long hours at the desk.

But, further, how often it happens in one's lifetime that the right hand is temporarily useless or unavailable at the moment when, if the left were endowed with the same cunning, it would be incalculably more valuable to us? How many operations and offices could be more efficiently performed were we not so clumsy with our left hand? What an advantage over us in every respect our ambidexterous friends can boast of, whether in the home, the office, the workshop, the gymnasium, or the cricket field? Then what instructive studies present themselves in connection with this question? How interesting—if not indeed exciting—to watch the progress of both hands, and to compare their work in the juvenile pupil. Will the character of individuality exhibit itself in precisely identical modes and

\*From advanced sheet of the preface to Mr. Jackson's new work on "The Teaching of Vertical Writing." By courtesy of the publisher, Wm. Beverley Harrison, N. Y.



forms of expression in both hands? Will both hands write with equal speed, and will both hands show exactly the same standard of excellence, say at maturity or at any preceding stage? Ambidexterity in handwriting should certainly be taught to the rising generation. It could not do harm, and it certainly would do a great amount of good. It would not occupy more time, and the results would be widespread, and in every way beneficial. If left-hand work were taught, not only in writing, but in drawing and art classes, I think there is little doubt that it would establish its superiority so satisfactorily as to pave the way for a very speedy introduction of a general ambidexterity in handicrafts of all descriptions.

London, March, 1895.

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## Vertical Writing.

By R. K. Row.

### PART II.

To get a clear and correct idea of the proper position for vertical writing it is necessary to cut away a little more underbrush of misconception. Professional penmen have been slow to adopt the new style, urging as a fundamental objection that it does not admit of freedom of movement. They have missed the idea that "it is primarily a reform in posture," which, as I have tried to show in Part I., involves a radical change in the position of the hand and in the relation of the arm to the desk. The ideal has been a *system of writing*, and for years there has been a more or less unconscious effort to adapt human bodies, and school and office desks, to the requirements of this system of writing. One marked

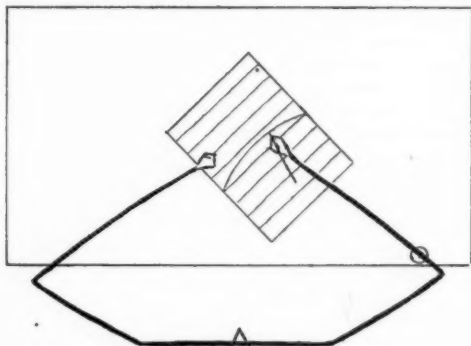


Diagram 1.

result has been the gradual reduction of the slope of the desk. The monks who used vertical letters in their missals, worked upon desks which sloped quite as much as the reading desks of to-day. The introduction of italic letters and the gradual increase of the slope has been followed by a corresponding reduction of the inclination of the desk, until now few school desks have a slope of more than five degrees, and in many business and penmanship schools the desks are perfectly flat. A reaction cannot come too soon. It is not long since a sloping writer advocated a desk slightly inclined from the writer. This would certainly facilitate the sliding movement about which so much has recently been said.

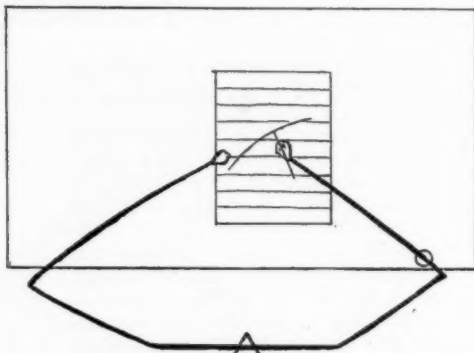


Diagram 2.

This reduction in the inclination of the desk necessitated raising the front edge to bring the paper to nearly the right distance from the eyes without completely doubling the body. Then when

the forearms are placed upon the desk the elbows must be spread as shown in Figs. 2 and 3. This position of the arm is commonly illustrated in books on sloping writing. Regarding this as the inevitable position of the arms it has been claimed that the paper must be turned as in Diagram 1, bringing the lines at right angles to the forearm which, swinging on its fixed rest at *O*, de-

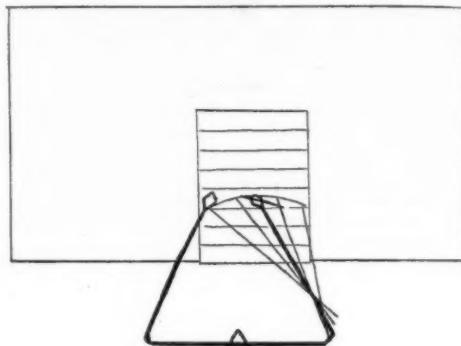


Diagram 3.

scribes an arc of which one of the ruled lines is a chord. If, however, the paper be placed as in Diagram 2, the arm would have to be lifted frequently or drawn up the sleeve to allow the pen to follow the lines. In this connection I cannot do better than quote from Supervisor Newlands:

"If there were no alternative as to the position of the arm and hand then their citadel, considering the style of desk, would be impregnable; but unfortunately for their cause we have alternatives. Fig. 4 represents the position many of our pupils assume at this kind of desk, and Diagram 3 illustrates the movement of the hand and arm. The paper is placed near the edge of the desk and the arm rests lightly on the upper part of the wrist, the elbows hanging easily at the side, the weight of the arm being principally supported from the shoulder. The wrist acts as a moving rest similar to the service performed by the fingers in the old muscular, forearm or combined movement, or whatever it is the teachers of the slope use in their writing. But some teachers may find

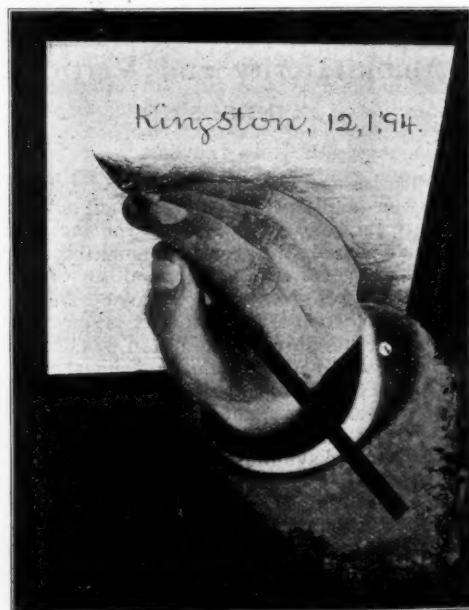


Fig. 8.

special cases in which the desk is so much too high that the pupils cannot take this position and write freely. In this extreme case the pupil may be allowed to place his forearms on the desk and turn the paper a few degrees.

"The effort to get pupils to write with the paper square in front of them with the arms resting on the desk will result in many of the pupils pushing the left arm well up on the desk, as presented in Fig. 5. This is the worst position assumed by any of our pupils, even under these unfavorable conditions."

The natural position at a desk of proper height and slope—about fifteen degrees—is illustrated in Figs. 6 and 7, and the hand position is still more clearly shown in Fig. 8. With the proper conditions it is scarcely necessary to teach this position,



pupils assume it instinctively. In our experiments we extemporized sloping desks for some pupils who at the ordinary desk, assumed the worst position. At first they placed the left arm up on the desk as before, but apparently found it uncomfortable and gradually withdrew it and straightened up to quite a natural position.

It is exceedingly important that teachers introducing vertical writing should understand that this ideal position of body and hand cannot always be maintained at the nearly flat desk, particularly when unadjustable in height and nearness.

If the hand is kept in the proper position on such a desk it is unnatural and restrains freedom of movement, giving usually only a cramped finger movement, and poor, slow writing. It is probably only this position that many of the opponents of vertical writing have seen. When the arm is raised, as in Fig. 2, the palm is naturally turned more downward.

This was, we think, the position occupied by our pupils at the time of Prof. Shaw's visit, nearly two years ago, and which he has described as "very constrained;" "the conventional position of the writing master." He seems to have overlooked the fact that with the paper straight in front of them, with such faulty desks as we have, the pupils could scarcely take any better position. It is true we have since improved this by the two modifications already referred to, namely, that shown by Fig. 4 and Diagram 3, and the very slight turning of the paper, but the fact remains that the desk must very largely determine the position of the body and hand. He implies that in concluding his paragraph in reference to our school, but the fact should have been stated clearly at first, as most important and explaining the rest.

That the Germans get better hygienic results is no doubt due to the fact that they have never adopted the modern American style of desk. To the results we had then obtained Prof. Shaw refers in very complimentary terms, but attributes the fact to the "novelty of the system and the enthusiasm of the teachers." At the end of nearly three years the novelty is gone, though perhaps the enthusiasm has increased, for we think our present results quite eclipse what we were pleased to pronounce excellent.

Dr. Shaw's warning to American educators and boards of education regarding the interests of the publishers in this matter is timely. The country is being flooded with copy-books that do not in any sense represent vertical writing. The reform in position, though fundamental, is not all. Reform in the style and character of letter forms is a natural consequence just as radical. Hair lines, long loops, short turns, delicate shading, all must go. There must be a complete breaking away from old ideals.

I would also commend Dr. Shaw's idea that during the first two years the blackboard should be used as much as possible. Since, however, the size of primary classes and the limited blackboard space, make it impossible to give sufficient writing practice in this way, we must look for the next best thing. This we have

found to be large letters written with a broad, smooth pen on at least fairly good paper. This involves none of the close, nervous tension required for fine work, and for work upon slates or soft paper with lead pencils. That young children are fond of writing these large forms with pen and ink, and show no evidence of strain, is guarantee that brief lessons under these conditions are not injurious, and the results are most gratifying.

Kingston, Ont.

Note.—For the diagrams and photographic views in this article THE JOURNAL is indebted to the *Penman's Art Journal*, New York.

## Giant Sun.

### Easy Lessons in Astronomy.

By MARY PROCTOR.

The sun, the ruler of the planetary system, is the grandest and most important of all the heavenly bodies, to the earth and the other planets which circle around it. It is the source of every form of energy existing upon this earth, excepting only the action of the tides and those activities which are due to the earth's internal heat. From the cyclone and the hurricane to the gentlest breeze of summer, all the movements in our air are due to the sun's heat; thunder and lightning, rain, snow, and hail, all forms of running water, from the vast volumes of the Nile, to the tiniest streamlet; from the mighty cataract to the slowly creeping brook, the glacier, the avalanche, and all forms of springs, are the products of solar energy. All orders of vegetation owe their growth to the sun's rays, not only those which clothe the earth now, but those also which formed the forests of past ages, and now form the stores of accumulated energy existing in coal mines and collections of natural gas and mineral oil beneath the earth's crust. Without his life-nourishing heat no form of animal life could exist on the earth, in the air, or in the waters. Man himself owes not only his life but all his powers, to the sun's amazingly profuse, yet steady emission of heat. In a sense never suspected by the sun-worshippers of old, the sun is the greatest emblem of almighty power, even as his light is the aptest emblem of all-seeing wisdom.

The real size of Giant Sun can be inferred from his apparent size only when his distance is known. According to Professor Young, the distance of the sun from our earth, is a little less than 93,000,000 miles; and its diameter is 866,500 miles, or 109½ times that of the earth. "If we suppose the sun to be hollowed out, and the earth placed at the center of it, the sun's surface would be 433,000 miles away. Now since the distance of the moon from the earth is about 239,000 miles she would be only a



little more than half-way out from the earth to the inner surface of the hollow globe, which would thus form a very good background for the study of the linear motions." (Lessons in astronomy, p. 112. Young.)

It is almost impossible to realize the enormous distance at which our sun is placed, with regard to the earth. Could we construct a railroad from the earth to the sun, an express train going at the rate of a mile a minute, would take about 176½ years, in reaching its destination. If we take more rapid motions, as that of a cannon-ball, we get more manageable periods of time. Nine years, for example, would suffice to carry a body from the earth to the sun with the motion which can now be given to a cannon-ball as it leaves the cannon's mouth; but the velocity of a ball so moving is far too great for us to be able to conceive it, since it signifies motion which the eye cannot follow. Sound, as it travels in air, would take more than fourteen years in reaching the sun—a thought which would have been rather startling to the sun-worshippers, who raised their voices in prayer to their glowing god. Sensation travels along the nerves of the human body at an estimated rate by which the sun's distance would be traversed in about 130 years. In other words; if a child in his nurse's arms, had an arm long enough to reach to the sun, so that he might touch it with the tips of his fingers, yet he would never know that his fingers were scorched with the heat, since 130 years must pass away, before the sensation of burning would have passed from the finger-tips, to the child's brain. Even light, which travels at the rate of 186,500 miles a second, yet takes about 8¼ minutes in traversing the distance between our earth and the sun.

It is as impossible to imagine the sun's size, as his distance. Imagine a tunnel constructed through the center of the sun, and a train moving through it, at the rate of a mile a minute. It would take 600 days, for the train to reach the other side of the sun. Or, imagine a railroad constructed around the edge of the sun, this same train going at the rate of a mile a minute, would require five years to complete the circuit.

Mass, however, is a more important quality in the comparison of the celestial orbs than size, though size appeals more directly to the mind. For the mass of each orb determines its power—one may almost say its vitality, since, by virtue of the power of attraction, matter, is in reality the source of every form of motion, and so, directly or indirectly, of every form of life. The sun does not surpass the earth as many times in mass as in size. This orb, which is 1,305,200 times as large as the earth, contains but 330,500 times the earth's quantity of matter. Suppose the sun divided into a million parts, yet each part would exceed the bulk of our earth. Were the sun, however, placed in a mighty balance, it would take 330,500 globes as massive as our earth to turn the scale. Gravity on the sun, is twenty-seven times greater than on our earth; that is to say a man who weighs 150 pounds here, would weigh nearly two tons on the sun. He would require the strength of a Hercules to enable him walk, and should he fall down he would be utterly unable to rise again.

Such is the size and surface of the sun as judged from his apparent disk. We shall see, in the next lesson, that he is at once much larger and much smaller than this; much larger if the extent of all his appendages be taken into account; much smaller if the dimensions of his real globe are considered. But, in whatever way we estimate his volume, the sun is a giant in size.

Yet, although the sun assumes gigantic dimensions when compared with the earth, it dwindles into insignificance when we consider that the depths of space are crowded with millions of stars, and that each star is a sun. Therefore, there are a thousand million repetitions of the glories and wonders which modern science reveals in the central orb of our system. The human mind cannot grasp the full meaning of the infinities of God's universe. They are the grandest problems we can contemplate.

I do not think I ever fully realized the unimportance of our position in space, until I read the following lines, taken from an account given of a lecture, by Professor L. P. Venen, of Vashon college, Washington, "Take a smooth, round pebble, divide and subdivide that pebble, until it has been resolved into molecules. These may in turn be subdivided to an infinity where the human imagination is lost. Then beginning with the inconceivable morsel build back to the pebble again. From the pebble to the earth, 7918 miles in diameter; to Jupiter, 1300 times larger than the earth; to the sun, which is 1000 times larger than Jupiter; to the star Arcturus (of which the Almighty talked with Job) which has a diameter seventy-two times greater than the sun, with a weight 375,000 times greater. Can we go further? The radius of the Lick telescope, the distance to which it aids the vision in every direction, would be hundreds of thousands of miles. Were it a solid mass, it would be but a speck of dust compared with the immensity of the universe—it would be "as a drop of dew to the waters of the Atlantic!"

The great truth resulting from these inquiries is that of the extreme loneliness of the Solar system. A skiff in the midst of the Atlantic is not more utterly alone. To take a striking illustration a journey from our sun to the nearest star—its next door

neighbor, as it were—would take millions of years. Were it possible to construct a railroad which could space that mighty distance, a train going at the rate of a mile a minute, would take no less than 40,250,000 years in completing the journey, the nearest star being Alpha Centauri. When we grasp the meaning of these truths with regard to the position of our solar system in space, are we not impressed with the sublime words of the inspired Psalmist: "When I consider the heavens, the work of Thy hands, the sun and stars which Thou hast ordained, what is man that Thou art mindful of him, or the son of man that Thou regardest him?"

New York City.

## Manual Training in High Schools.

By GUSTAF LARSSON.\*

A prevalent mistaken notion about sloyd is that the system is regarded as finished and perfect by its promoters. I can speak with some authority in this matter and I deprecate most earnestly any idea of finality in this as in any other branch of educational work. Sloyd stands for *study*, for growth, and for progress. There is nothing fixed or final about it. The models and exercises used to-day we are ready to set aside to-morrow for something better and I want to report that this has just been done with our elementary course, in which nine models have been replaced by such as seemed better suited to our purpose.

The only thing about our work which I regard as a fixed fact is that its *basis* is sound, that we are headed in the right direction and my confidence is strengthened by many unexpected letters of encouragement and commendation which I have received during the past year from eminent educators and scholars in various parts of the United States, particularly by those received from leading psychologists.

Another and more practical test of the *aim* of our work is the result obtained by sloyd methods in places where it has had abundant opportunity to show its possibilities, as for instance, in the work at the Concord reformatory. There sloyd has been for the past few years a daily exercise and the leading officers of that institution, having a rare opportunity to observe its mental and moral influence, declare it to be greater than any reforming agent which has come under their observation. The manual skill derived from it has been more than satisfactory. It is particularly significant that, in that institution, industrial work of various kinds has long been carried on and can now be seen side by side with the sloyd. I take this occasion to urge all who are interested in manual training as an educational influence to visit the Concord reformatory and observe this work there.

It is gratifying to announce that more than ten thousand children in the United States are receiving instruction in sloyd given by graduates of our training classes, of whom we have sent out fifty-five. Two hundred and forty-three teachers have been enrolled in the Sloyd Training school and over one hundred have been in attendance during the past year.

I have recently spent much time in investigating the work in manual training high schools. I have watched classes at work in various places and have talked freely with teachers and directors. I am happy to report that I find men of established reputation engaged in this work who do not consider the present methods as final, and who feel, as I do, that there is possibility as well as need of improvement in these courses. This fact and the recent act of the legislature of Massachusetts requiring manual training in high schools in every city having over 20,000 inhabitants has decided me to devote my summer this year to the effort of working out and arranging a high school course in accordance with the sloyd principles. In undertaking this work I shall warmly welcome the cooperation of men of experience everywhere who agree with me that the manual training methods of the future must be kept abreast of and in harmony with the best educational methods of the day, and that if we who now occupy the field do not meet the demands of the times there are those just ahead of us in the moral and intellectual world who will surely and shortly supersede us.

A course of manual training for high schools must teach the correct use of the various tools in such constructive work as embodies the underlying principles of the mechanic arts and in such a way that the pupil may gain the utmost general power attainable through the acquisition of manual skill. The course I have in mind will cover a period of three years in the high school and consists of bench work, wood turning, and wood carving in connection with mechanical drawing. I ask your attention to points which I consider basal in any course of work for manual training in high schools.

*First.* The course should be based upon progressive exercises and not upon models or tools, the progression being in accordance with the growing power of the worker.

\*From an address delivered at the graduating exercises of the Sloyd Training School, Boston, Mass.



Note.—By an exercise in sloyd I mean a specific use of a tool involving certain mental and physical effort. Rational progression will hardly allow more than four or less than one new exercise in a model.

Second. Every exercise should be such as to give the pupil a good reason from his point of view for putting forth his best effort.

Third. The exercises should be applied on objects, the use of which can be thoroughly appreciated by the pupil.

Fourth. Preference should be given to exercises which will aid the pupil in the laboratory or other school work.

Fifth. Every piece of work should be if possible, of truly artistic form and proportion.

Sixth. The course should be interspersed with work which develops appreciation of curves and the sense of form and touch in judging the correctness.

Seventh. Working drawings based and executed on scientific principles should precede the making of each object.

Eighth. Tools and instruments should be such as are in general use and preference should be given to those which aid physical development and which are the least mechanical with a view to the fullest development of the worker's original power.

Ninth. All practice given merely for the sake of gaining facility in the use of tools should be avoided.

Tenth. A variety of common native woods suited to the character of the objects should be used and studied.

Firmly believing that the efficiency of this training is not limited to any particular line of work but that it should accomplish nothing less than real "fitting for life," the making of true citizens. I urge the importance of placing work which holds such possibilities in the hands of true teachers.

Whoever teaches manual training must, of course, be skilled in the mechanic arts, but if he has not pedagogical tact, if he cannot touch the springs of action in the life of youth so that the best is brought into full play, I do not care very much to know that he has exceptional technical skill in any special line of work. What I do want to know is that he is first and foremost an earnest student of the life of youth and that he works to promote its healthful growth. Rightly directed power is what we are after and the acquisition of certain skill is a means to this end. A true teacher knows how to use this means so that the forces for good become dominant in the life.

## Some Poisonous Plants.

By LIZZIE M. HADLEY.

Plants poisonous to taste or touch, or both, are only too common and the impetus lately given to "Nature studies," has



Poison Ivy

aroused an interest that will doubtless result disastrously to many a youthful botanist, unless he is able to recognize at sight the most harmful varieties of vegetation.

Poison ivy is so common and is such a beautiful, harmless looking vine, clambering over rocks, or nestling at the foot of some tree or shrub that children, attracted by its glossy foliage, will frequently gather both its leaves and branches. Happily, some may handle it with impunity, but to those who are susceptible to its poisonous properties, no after care can prevent the direful results sure to follow this handling.

Yet, even the youngest child can soon learn that its three

leaves are the danger signal and that by means of these it may



Poison Sumach

readily be distinguished from the five-leaved Virginia creeper, for which it is frequently mistaken. (Fig. 1.)



Nettle

the season comes the berry, about the size of a pea, and of a greenish white color marked with purple. (Fig. 11.)

Purple, indeed, appears to be the badge of most poisonous plants, and streaks, veins, or blotches of this royal color are frequently found in stem, flower, or fruit.

Perhaps the nettle can hardly be termed a poisonous plant, for no very serious consequences result from contact with it. Yet the immediate effect of a close acquaintance is to say the least—decidedly unpleasant, and shows that the plant is one to be avoided.

The common nettle (*Urtica Canadensis*) is found in damp soil and



Poison Hemlock

usually grows from two to four feet high. It has short-stalked, opposite, oval leaves, small green flowers, and a stem thickly set with short hairs ending in a point sure to break at the slightest touch. Tiny bulbs at the roots of these hairs secrete an irritating juice that causes a disagreeable itching and burning sensation. This unpopular little neighbor is found in nearly all countries and by the ignorant is believed to be endowed with certain mystic properties. In Italy



Water Hemlock

and some parts of the Tyrol, during a thunder-storm it is frequently thrown into the fire to secure immunity from lightning. The English country-folk believe that worn about the person it will give courage; and consequently it is greatly in demand in time of war. In Scotland nettle broth is a specific for skin diseases and nettle-tea is a common remedy for nettle-rash. (Fig. III.)

Yet, harmful as plants poisonous to the touch may be, they are far less to be feared than are those which are poisonous to the stomach. This latter class—in spite of all care—claims each year its victims. Perhaps the most harmful and most to be dreaded of these plants are the poisonous varieties of the umbelliferae.

Poison hemlock, sometimes called poison parsley, is common in waste places in the middle and New England states. It grows from two to five feet high, and has a smooth, erect stem of light green, mottled with brownish purple, or claret color. The small white flowers are grouped in umbrella-shaped clusters and the seeds are of a dull, greenish color. The plant is a powerful narcotic and is supposed to have furnished the famous death draught of Socrates. (Fig. IV.)



Hemlock.

slightly tinged with purple, and large, dark green leaves irregularly and coarsely toothed. The fruit is egg-shaped, about the size of a small apple, and covered with sharp spines. (Fig. VI.) Every part of the plant is poisonous; the kidney-shaped blackish seeds being especially deadly. It is said to have received its common name of Jamestown or "Jimsen-weed" from the fact that during "Bacon's rebellion," several soldiers sent to Jamestown were poisoned by eating the young shoots of this plant.



Laurel.

Henbane (*Niger hyoscyamus*) is another frequenter of the rubbish heap. It is a low, branching plant from one to two feet high with a nauseous odor. The oval, irregularly toothed leaves are of a dull green color, and the sticky hairy stems bear a pro-



6

The water-hemlock or spotted cow-bane is found in meadows and marshy places, and may be known by its umbels of white flowers, its purple-streaked stem, and its coarsely-toothed, thrice compound leaflets. (Fig. V.) The whole plant is poisonous and the root is said to contain the most deadly vegetable poison in this country. It is sometimes called "dead tongue," from its paralyzing effect upon the vocal organs.

The thorn apple or Jamestown weed is common in waste places. It is a rank-growing, ill-scented plant, about three feet high, with showy, tubular white blossoms



American Hellebore.

fusion of funnel-shaped blossoms of a pale straw-color veined with purple. The fruit is an ovoid capsule containing a great number of brown seeds. The whole plant is poisonous. (Fig. VII.) The leaves of the laurel, so common in wet woods and along river banks from Maine to Georgia, are said to be narcotic and poisonous. I recollect one instance, some years since, where the leaves of the narrow leaved laurel (*Kalmia angustifolia*), were mistaken for the checkerberry or wintergreen with a fatal result. (Fig. VIII.)

The leaves of American hellebore (*Veratrum viride*) are among the earliest to appear in spring. The plant loves marshy places and may often be found in close proximity to the shrunk-cabbage. It is from two to four feet high and the strongly veined lower leaves are frequently a foot long and half as wide. The root, which is exceedingly poisonous, is sometimes mistaken for sweet-flag, and the eating of it usually results fatally. (Fig. IX.)

I have often wondered if this eagerness on the part of children to taste every plant within their reach, may not be a relic of the instinct implanted in primitive man who must often have tested the unknown properties of plants in this manner. But, whatever its origin the habit is a constant menace to the lives of the little ones, and every teacher should feel that the year's work is incomplete unless the children have been taught to know and guard against the poisonous counterfeits of "sweet cicely," angelica, sweet-flag, and caraway.

## The Evolution of the Cultivated Rose.

By FRANK O. PAYNE.

I know of no more fascinating object of study than the rose. Whether in its natural wild condition, growing in hedge rows along the country way-side, or blooming in the glass houses of the rose-grower, it is equally interesting as a subject for lessons in nature study.

To take up the lesson outlined here, it is well to have a supply of both single and double roses. Country teachers can have both. The roadside will furnish the one, while the garden will supply the other. City teachers will have to content themselves with double roses alone. But this should not discourage the city teacher, for there is a world of history hidden in the heart of every double rose, if you will but open the volume and read.

**Material.**—A large supply of roses. Let there be enough to supply each pupil with at least one, more when possible. When both single and double roses are at hand, give lesson on the single rose first, later on the double one. In the following outline it is assumed that both roses are at hand.

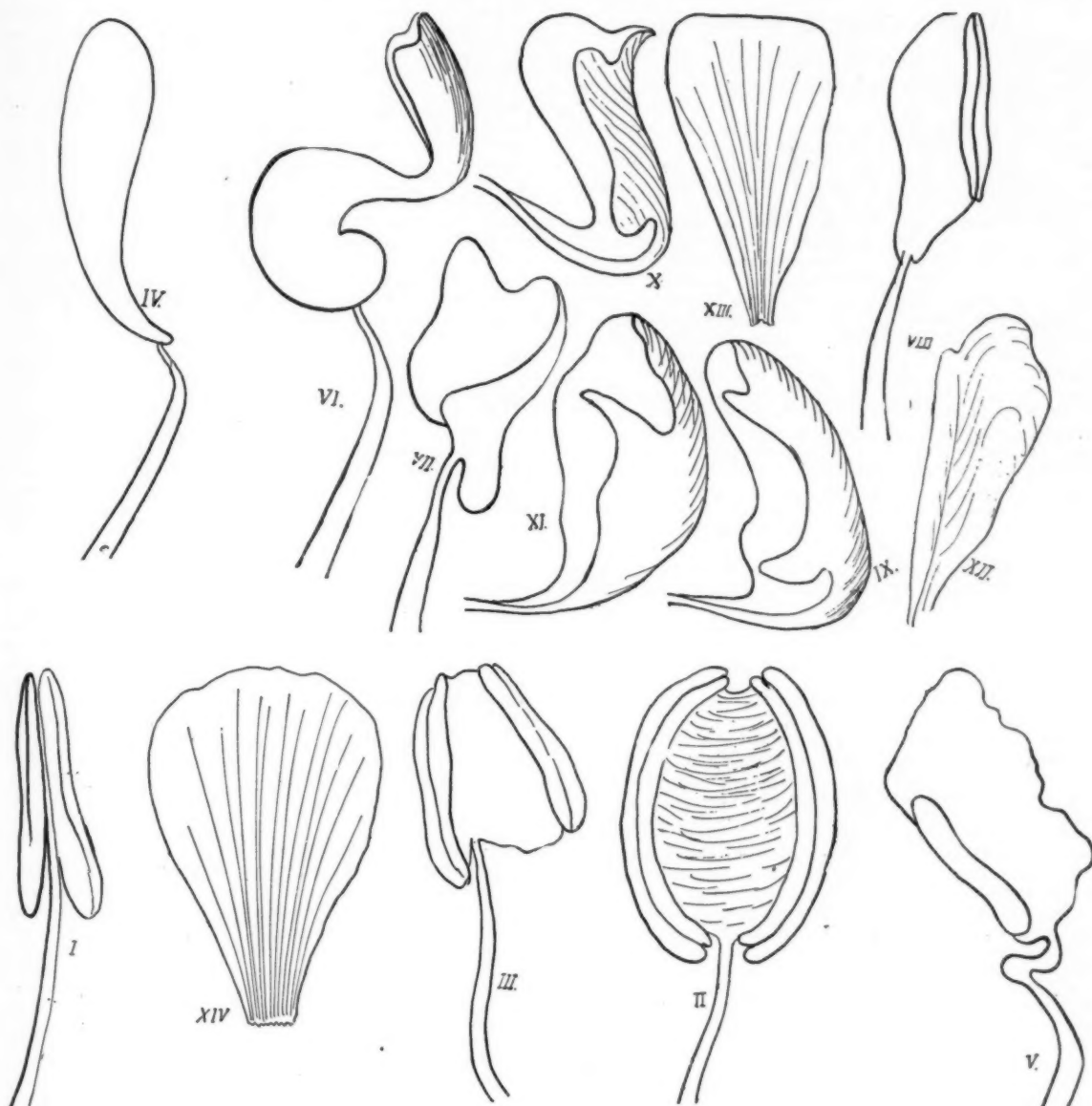
**First Lesson.**—This may be a general lesson. The more striking features of both roses should be noted. Facts of foliage, thorns, color, etc., are here to be remarked, and the one most striking feature, *i. e.*, the difference in the number of petals should be discoursed upon. Tell the children that all roses were originally single, that the single rose is the parent (ancestor) of the double rose, and that you want to have them discover if they can, how it was possible to make the beautiful double rose from the common single one. The double rose may then be laid away in water while the study of the single rose is progressing.

**Second Lesson. The Wild Rose.**—Carefully examine the single rose. How many sepals has it? How many petals? Has any one a rose with more than five petals? Are these extra petals just like the others in size and shape? This will disclose the fact that sometimes single roses will be found having one or more smaller petals than the normal number (*five*). Bring out the fact by questioning, that when these extra petals occur, they are not outside in the outer row, with the regular corolla, but are inside it. This fact is important since it leads up to the inquiry whence they originate.

Now examine the center of the flower with a glass if possible. Can you count the stamens? Are these stamens all alike?

It is necessary to cut the flower open downward through the center. This will show the hollow receptacle with the pistils in the middle while great numbers of stamens cluster around it and arch over it. Among these stamens will always be found normal ones, Fig. I., having its slender filament (*f*) and its two-celled anther (*a*). There will also be found numerous grotesque forms Figs. II.—XII. These may not all be found in any one rose, but there will be much interest awakened in finding new forms. Each different shape should be drawn on an enlarged scale, and from these drawings important conclusions may be reached as to the way in which nature changes stamens into petals. I shall say more upon this question later.

**Third Lesson. The Cultivated Rose.**—The plan for this lesson, although essentially the same as that used in the preceding lesson, should be conducted in a somewhat different manner. With the wild rose the development is in its beginning; with the cultivated rose the evolution is complete or nearly so.



The better treatment for the cultivated rose is to begin thus : 1. Pluck off the outer circle of petals. These are all alike. Select one and draw it in outline. Number it 1. (Fig. XIV.) 2. Next remove the second circle in like manner and draw one of these petals. 3. Remove petals in this way, circle by circle. It is not necessary to draw one of each circle since the change is a very gradual one ; but let each new shape be sketched until the middle has been reached. The same forms (Figs. I.—XIV.) will be found in almost every rose examined. Nor are these all the forms to be found. This might be called reading history backwards. It is the same kind of research employed by the geologist and archeologist.

**Discussion.**—It is necessary that the teacher be able to interpret these facts rightly.

There seems to be a tendency in many single flowers to double. This tendency is very marked in the rose, as may be seen in the stamens of the single rose. These grotesque forms are produced by the attempt of stamens to change to petals. In Figs. II., III., IV., and VIII., the widening of the upper part of the filament has caused the stamen to take on a petaloid form. In Figs. V. and VIII., the anther cell on one side has also been transformed into a petaloid expanse. In VII., only a trace of anther is to be seen, and this much enlarged as if it tried to expand but could not break loose at the lower end. In VI. the upper end of the anther has split and spread open to form a petal. In IX., X., and XI., this widening has extended to the filament as well as the anther. Figures XII. and XIII. have lost all trace of anthers, and in XIV. a perfect petal is evolved.

The figures in the chart supplement the accompanying sketches by showing how in some cases a filament will spread out into a petal bearing a more or less perfect anther on one side or on the summit. Another plant which shows this evolution

from a single ancestor is the white water-lily. But in this last, plant the widening seems to be always that of the filament, never the anther, which becomes fainter until only a trace can be found at the summit of a petal.

**Cultivation Assists Evolution.**—The way gardeners employ to double flowers, is to examine the single flowers to find traces of this tendency to change stamens into petals. Seeds from such flowers are gathered and each new year sees the flowers nearer double. At last so many stamens have been changed to petals that the flower is changed completely.

Poppies, pinks, violets, buttercups, and many other flowers are doubled in this way. Sometimes this changing in flowers goes on so far that all the stamens change to petals, and the pistils to stamens, rendering such flowers sterile ; and in the flowering almond, the pistil is changed to a leaf.

All these things go to show that a flower is only a modified branch, that sepals, petals, stamens, and pistils are merely leaves changed for some special purpose.

**Deductions.**—The rose presented thus, may to be used in many lessons in nature and in morals. Another fact should not escape. I allude to the fact that in cultivated roses, not only the flower is changed, but the whole plant as well. The stalks are tenderer, the thorns larger and fewer in number, the flower changed greatly in color and perfume, and the whole aspect of the plant has become more refined. The nature lesson here is too obvious to need comment. The general truth forces itself that cultivation makes things more beautiful, and that cultivation of any part or faculty indirectly cultivates the whole. This applies to care of mind and heart.

I. and II.—Stamens. IV., V., VI., VII.—Partly changed stamens, VIII., IX.—Petals with a trace of anther. X., XI.—Petals with a deformed part where anther was. XII.—Petals of the innermost circles. XIII.—Petals of the fifth circle. XIV.—Petal of the third and fourth row.



## What to See in Paris. II.

By FLORENCE BLANCHARD.

One of the most interesting buildings of modern Paris is the Hotel de Ville.

The new building is rich in statues and paintings, but we must think of the old building if we would read history. The present hall has received no sovereign within its walls—it has had no extravagant entertainments—it is free from all bloody revolutions and revolting crimes.

After the time of Louis XVI. it became the history of France and has always been the rallying point of the democratic party.

Here the captives of the Bastille were conducted in triumph—here on July 17, 1789, Louis XVI. publicly testified his submission to the will of the National Assembly, having on the tri-colored cockade which Lafayette had chosen as the cognizance of the New National Guard—here in 1794, Robespierre tried to escape from his own tool, the Commune, and failed—here in 1830, was celebrated the Union of the July Monarchy with the bourgeoisie and Louis Philippe presented himself at one of the windows and embraced Lafayette. From the steps on February 24, 1848, Louis Blanc proclaimed the institution of the republic. From September 4, 1870, to February 28, 1871, it was the seat of government of the National Guard. From March 19, 1871, to May 22, 1871, it was the seat of government of the Communards and their committee of safety. May 24, 1871, it was burned by the Communards, 600 of their own number perishing in the flames.

It is the Place de l' Hotel de Ville that is so full of tragedy. After the massacre of St Bartholomew in 1572, Catherine de Medecis there consigned the Huguenot chiefs to an ignominious death by the gallows. Victims as well as criminals suffered there under a despotic government. Among the most famous criminals who have perished there are Ravallac, the assassin of Henry IV.—1610.

Marquise de Brinvilliers, the poisoner—1676.

Cartouche, the highwayman—1741.

Damiens, who attempted to assassinate Louis XV.—1757.

Perhaps our best charity to the place is to forget the past.

Its popular recollections are the second marriage of Napoleon I. in 1810—the entry of Louis XVIII. in 1814—the coronation of Charles X. in 1825—the marriage of the Duke of Orleans in 1837—the visits of the different foreign potentates to Napoleon III.—and the proclamation of the republic, September 4, 1870.

Close by is the Place du Chatelet which marks the spot where the old fortress of Le Grand Chatelet, the horrors of whose torture chamber have been portrayed in the verse of Clément Marot, used to stand. Here is the point where visitors may enter subterranean Paris, if they will, to view the vast system of sewers (égouts)—a permission granted once or twice a week in summer.

The Bastille was erected in 1371-83 and during the reign of King Charles V. and VI. became the state prison for persons of rank. Stormed July 14, 1789, and razed and the ground, some of the stones were afterward used in building the Pont de la Concorde.

In the Revolution of June 1848, the strongest barricade of the insurgents was in that spot and in May, 1871, it was one of the last strongholds of the Communards. The column of July (Colonne de Juillet) which now adorns the place was erected in 1831-40 in honor of the heroes who fell in the Revolution of July, 1830.

In the business part of the city is the Halles Centrales—a vast structure of iron chiefly, covered with zinc. The whole market covers twenty-two acres and has twelve pavilions, each pavilion containing 250 stalls of an area of forty square feet each. The rent of these stalls is twenty centimes a day (.04). Underneath each stall is a cellar of the same area and a height of twelve feet. The provisions begin to arrive about ten o'clock in the evening and before day dawns, 15,000 vehicles have deposited their loads. These vehicles resemble our prairie schooners of the old emigrant days. The wholesale trade lasts from early morn till eight or nine o'clock, amounting to 500,000 francs daily. Then comes the retail trade for the rest of the day. The best time to visit them is in the early morning between three and five.

Beside the Halles Centrales is the church of St. Eustache ranking next to Notre Dame in size. It has the impressiveness of a Gothic edifice and the spirit of the Renaissance in every detail. It was begun at the time of the Hotel de Ville. Here the funeral rites of Mirabeau were celebrated in 1791 and the feast of reason. In 1795 it became a temple of agriculture.

The Louvre, the Luxembourg, Notre Dame, the Madeleine, the Opera, and the Palais de l' Industrie are included within that conveniently central space which to the American is Paris.

But these more modern sights, while pleasing, are not so interesting. The Opera House without loses in grandeur from the fact that you must walk around it to see it all—it covers three acres. The theater itself is not large, holding only 2156 persons. The building was begun in 1861 and finished in 1874. The best thing in it is the grand staircase. The Salle itself is overlaid with decorations in red and gilding.

The Colonne Vendome in the Place du Vendome is an imitation of Trajan's Column at Rome, and is 142 feet high and thir-

teen feet in diameter. It was erected by order of Napoleon I. in 1806-10, to commemorate his victories over the Russians and Austrians in 1805 and on the top a statue of Napoleon in his imperial robes was placed. Since that time its history is the political history of France. In 1814, the Royalists replaced the statue of Napoleon by a monster fleur-de-lis surrounded by a white flag. Louis Philippe, in 1831 caused a new statue of the emperor in great coat and three-cornered hat to be placed there, and in 1863 Napoleon III. had this replaced by one resembling the original figure. The column was overthrown by the Communards in 1871 and re-erected in 1875.

The Hotel Continental occupies the site of the former Ministère des Finances which was also burned in 1871.

Near by is the church of St. Roch the best rococo edifice in Paris. The place in front in the last century extended to the Tuileries, and 'twas there that the Royalists who attacked the convention on October 5, 1795, placed their best battalions.

The Rue Royale was the scene of some of the most violent outrages of the Communards. Six houses were set on fire and others near by in the Rue du Faubourg St. Honoré. Twenty-seven persons perished.

The Place de la Concorde is one of the most beautiful squares in the world, but its historical associations are somber. Since 1793 it has had various names, the name which it bears at present, having been borne formerly in 1795. The guillotine began its bloody work there in 1792 and in quick succession the victims followed one another—Louis XVI.—Charlotte Corday—Brisson, the chief of the Gironde with twenty of his assistants, Marie Antoinette—Philippe Egalité, Duke of Orleans and father of King Louis Philippe—Mme. Elizabeth, sister of Louis XVI.—Hébert and his adherents, Marat and his followers, the Orleanists—Danton himself and his adherents, among whom was Camille Desmoulins—the atheists Chaumette and Anacharsis Cloots and the wives of Camille Desmoulins, Hébert, and others.—Robespierre and his associates, July 28, 1794, his brother, Dumas, St. Just and others—then a few days later eighty members of the Commune who had been tools of Robespierre. Between January 21, 1793 (Louis XVI.) and May 3, 1795, 2,800 persons perished here by the guillotine.

In 1830, the present name was again revived and it was resolved to adorn it with an ornament wholly unpolitical in every sense. This opportunity was soon afforded by the gift of Mohammed Ali, viceroy of Egypt, of the obelisk of Luxor, to Louis Philippe. This obelisk was erected by Rameses II., King of Egypt in the fourteenth century, B. C., before the gate of a temple which his great ancestor Amenhotep III. had built in Luxor.

Looking up the Champs Elysées you see the Arc de Triomphe de l' Etoile, the largest in existence and visible from almost every part of the environs of Paris. It was begun by Napoleon I. in 1806 and completed by Louis Philippe in 1836.

The Eiffel tower is worth ascending for its view of Paris, if the day be very clear. Next to the Museum de Cluny, travelers will find the Musée Carnavalet the most interesting. It is a history of the antiquities of Paris. The greatest library in the world, the Bibliothèque Nationale must not be omitted. Visits to the Catacombs can only be made three or four times in the year and then *en masse*. They are of secondary importance. The lover of old books must find his way to the Rue St. Jacques, long famous for its treasures, and to the little open air stores along the left bank of the Seine.

There are many parks in which one may seek enjoyment, those of chief importance within the walls being the Tuileries, the earthly paradise of children on the right bank of the Seine, and the spot of the chief scene of the festival of the Supreme Being where Robespierre made a speech full of piety and virtue and burnt the effigies of atheism, ambition, self-seeking, and false simplicity, the gardens of the Luxembourg, a playground for boys, the Champs Elysées where the Parisian world lingers, the Champs de Mars with the garden of the Trocadero opposite to it, the Jardin des Plantes, a natural history museum covering seventy-five acres, and in the grounds the gobelin tapestry manufactory with its collections of ancient tapestries, the Parc Monceau, the prettiest public garden in Paris, the Parc des Buttes Chaumont, out of the way for visitors at the northeast corner of Paris, but naturally beautiful and well worth a visit.

Outside the walls, there is the old Parc de Vincennes to the east, once a forest, where Louis IX. used to hunt and administer justice, and to the west the Bois de Boulogne, once the resort of duellists, suicides, and robbers. The Jardin d' Acclimatation, another natural history museum, is here.

The cemeteries of Paris are really parks, containing some good works of modern sculpture, though their interest is lessened by overcrowding and the hideous adornments of artificial wreaths and flowers. The three largest cemeteries of Paris are Père Lachaise, Montmartre, and Montparnasse. The pagan character of Père Lachaise impresses you and the great weight of the tombs. It has its historic interest in the scene of an engagement between the Russian and French troops, March 30, 1814, in which the former were victorious. Here also the Communards and the Versailles troops fought.

Near the Parc de Vincennes is the little cemetery of Picpus in which Lafayette lies buried. In the tombs are members of some of the oldest families in France. At the end is the Cimetière de



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Guillotines where rest 1,300 victims of the Revolution executed at the Banière du Trone, among them the poet André Chénier, the chemist Larvisier and General Beauharnais, the first husband of the Empress Josephine.

The suburbs of Paris are full of interest and especially Versailles, a little journey from Paris. The town of Versailles is not attractive on a hot day. The road from the railroad station to the palace is long and hot and dusty. You can scarcely imagine that in the dilapidated, mouldy houses behind the ragged, stunted trees men once lived who gambled away the nation's rights.

There are a few good paintings in the galleries of the palace, but to find them you must plod through yards of hideous, sanguinary ones.

It is hard to think of but one family here, that of Louis XIV. for whom the palace was built. In the little Trianon, Marie Antoinette passed much of her time in company with her favorite Mme. de Lamballe. The grand Trianon was the home of Mme. de Maintenon, the mistress of Louis XIV. It now contains interesting relics of Napoleon. On the lake is the small Swiss village where royalty masqueraded. Marie Antoinette was the Dairy Maid.

St. Denis, another interesting spot, is very old; the burial place of kings of France.

In the church the Maid of Orleans hung up her arms in 1429.

In 1593 Henri IV. abjured Protestantism in this church.

In 1810, Napoleon I. was married to Archduchess Marie Louise. When the Revolution broke out July 31, 1793, the convention resolved that those tombs should be destroyed and the work of desecration began October 12, 1793 and the bodies of the illustrious dead from Dagobert (d. 638) to Louis XV. (d. 1774) besides other celebrities were thrown into "fosses communes" dug in the neighborhood.

When the church was restored in 1806 Napoleon decreed it should be used for the burial of his own ancestors, but only one member of his family was buried there and that was afterwards removed, his nephew, Napoleon Charles, son of his brother Louis.

In 1817, Louis XVIII. caused the remains of his ancestors as well as those of Louis XVI, and Marie Antoinette to be replaced in the crypt.

He himself (d. 1821), the Duc de Berry assassinated 1820, and several of his children were the last Bourbons interred there.

Napoleon III. again destined this church to be the burial place of French emperors but he died and was interred in a foreign cemetery in 1873.

The interest of Fontainebleau centers in the fact that in the chateau the sentence of divorce was pronounced against the Empress Josephine in 1809. Here in 1685 Louis XIV. signed the revocation of the edict of Nantes.

The Cour des Adieux is the scene of Napoleon's parting from the grenadiers of his old guard on April 20, 1814, after his abdication. On his return from Elba, March 20, 1815, he here reviewed his troops before marching to Paris. The right wing of the palace was the summer home of M. Carnot; in the Chapelle de la Trinité Louis XV. was married in 1725, the Duc d'Orleans in 1837, and Napoleon III. was baptized in 1810. Many of its apartments have interesting recollections connected with them.

In the little church in Reuil, the Empress Josephine is interred. Beside her are her daughter, Queen Hortense, the mother of Napoleon III. and her son Eugène Beauharnais.

The palace St. Cloud is a ruin now. In the Salle d'Orangerie, the council of five hundred once held their meetings. November 9, 1799, Bonaparte with his grenadiers dispersed the assembly and in three days he was proclaimed first consul.

The Château de Vincennes was founded in the twelfth century, and from the time of Louis XI. became a royal residence till 1740 when it was converted into a state prison. Among the illustrious prisoners confined there were the king of Navarre in 1754, Cardinal de Retz in 1652, Count Mirabeau in 1777, and last the conspirators against the national assembly of 1848.

The workshops of Sevres are uninteresting as one does not know the process of painting, molding, and enameling. The exhibition rooms however, contain many beautiful vases and copies of paintings in porcelain, among them Raphael's St. Cecilia.

Paris, June 1895.

## Breath Figures.

It is well-known to children that if they draw figures with the finger on a window-pane, and then breathe on them the figures will appear. Electricity makes such figures also. Place a glass plate on a table for insulation, and put a coin of any metal on the center of the plate. In many cases the image on the coin does not touch the glass on account of the projecting ring. Arrange a strip of tinfoil from the coin to the edge of the glass; on the coin place a smaller plate of glass, and above that plate place a second coin. Connect the tinfoil and the upper coin with the poles of an electric machine, and turn the handle of the machine for two minutes, so that continuous sparks may pass. On taking up the glass, nothing can be seen on it, even with the help of a magnifying-glass. Yet on the glass there is a latent impression; for, by breathing on the side of the glass next the coin, a clear

frosted picture of that side of the coin which had faced it will be produced, even to the smallest details. The whole projecting parts of the coin have a black counterpart, and there is a marvelously fine gradation of shade corresponding with the depth of cutting on the coin. If this breath-figure be examined under a microscope, the moisture will be seen really deposited over the whole; but the size of the minute water-particles increases as the part of the picture is darker in shade. Around the coin's disk is a black ring, a quarter of an inch in breadth. Should the coin used have milled edges, radial lines will pass through this ring. If these breath-figures are carefully protected, there is no apparent limit to their permanence, even for years.

If a very hot, clean coin be placed on a cold mirror, and be removed after being cooled down, nothing will be seen on the glass. But if the mirror be breathed upon, an exact image of the coin becomes visible. The hot coin in some way seems to alter the dust-particles on the mirror, causing them at certain parts to reflect more light than at others, to be brought out more plainly when the moist breath develops them.

Probably all polished surfaces may be similarly affected. A plate of quartz gives most beautiful images, perfect in details, retaining their freshness longer than those on glass. If a piece of mica be split, and a coin be slightly pressed for half a minute on the new surface, without any current of electricity or application of heat at all, a breath-figure of the coin is left behind. If a leaf of paper, printed on one side and thoroughly dry, be placed between two plates of glass, and left for ten hours either in the daylight or in the darkness (a slight weight being placed over to keep the paper even), nothing is seen; but as soon as you breathe on the glass, a perfect breath-impression is made of the print on both pieces of glass. These are generally white, and are most easily produced during keen frost. If paper devices be placed for a few hours under a plate of glass, clear breath-figures of the devices will be produced when you breathe on the glass. After an ivory point has been traced in any shape over a glass plate with slight pressure, a black breath-figure of the writing is made at once. If plates of glass lie for some hours on a table-cover which has on it figures worked in silk, strong white breath-figures are impressed on the plates, the silk coming out white and the cotton black.

The plate-glass window of a hotel in London has on the inside a screen of ground-glass lying near, but not touching; upon the latter are the words "Coffee Room" in clear, unfrosted letters. When the screen was taken away the words were left plainly visible on the window, and no washing would remove them. A house in London had been a hotel three years before; no one of the windows had been a brown gauze blind, with the gilt letters, "Coffee Room" on it. On misty days the words "Coffee Room" are distinctly seen, but not on other days. This is a marvelously accurate instance of permanent breath-figures, the mist acting like the breath, depositing the moisture on the glass.

## Learning a Language.

A good dictionary, and a book of simple tales in the language chosen, are all that is necessary in the first instance. With these in hand, the motto of the beginner should then be to read, read, read. The printed page, at first new and unfamiliar, will gradually unfold itself as word after word is learned, and when a sentence has been translated, the reader will go on with a strange feeling of delight to master more of the contents. There is no better method of retaining a word in the memory than in having to go to the trouble of looking it up in the dictionary. The word will be certain to stick, more especially if it is found recurring once or twice in the same page. As much reading should be done as time will allow. A page of the dictionary may also be frequently gone over. It soon acquires a wonderful interest. In this way the study is made from the first attractive and agreeable. If the book read be by one of the best writers, its inherent qualities will interest, while the increasing power to interpret correctly the writer's meaning will act as a constant stimulus to go on acquiring more words and phrases, and their correct use. The help of a friend imbued with similar desires and aims will be useful. At the very outset, attempts should be made to carry on conversation together in the language. The power to do this, at first halting and awkward, will gradually expand. The name of every object which is round about us in our daily life should be learned and referred to in conversation. The phrases employed to denote particular actions and feelings should be looked up as they recur to the mind. Now and again the conversation that may be heard at the table, in the train, anywhere, may be translated mentally. There are many times when one is alone and there is nothing in particular to occupy the thoughts; such a moment should be seized to recall words we have come across in our reading, and thus make them the more firmly our own. A book of poems will be of much assistance. It is easier to learn a poem by heart than a bit of prose, and if the meaning of each passage has been thoroughly mastered, it will be a simple operation to recall each word by its context. In this way it is wonderful how rapidly the vocabulary increases."—*Chambers' Journal*.



## Arithmetic From the Third to the Eighth Year.

By A. B. GUILFORD.

### INTEREST.

I am a good judge of horses, desire to purchase one, but have not the necessary amount of money. What may I do, Mary?

You may borrow the money.

Of whom may I borrow it?

Of some one that has money to lend.

Right. I go to a friend of mine, Mr. Williams, borrow three hundred (\$300) dollars for a year, and purchase the colt. The bargain that I make is a good one. for at the end of a year I sell the colt for four hundred (\$400) dollars and return the money that I borrowed of Mr. Williams. What did the borrowed money do for me?

It earned money for you.

Yes; and for this reason I should pay Mr. Williams something for the use of his money. If I had lost money on the colt it would still have been right for me to pay him for the use of the money, though I had not used it with good judgment. I agreed to pay him six per cent. of the sum borrowed for the privilege of using that sum for one year. What is 6% of \$300, John?

It is \$18.

Describe this \$18, Henry.

It is money paid for the use of borrowed money.

You may call such money *interest*. Name the amount of money on which I pay interest, Susan.

Three hundred dollars.

This sum is called the *principal*. What per cent. was taken of the principal to find the interest for one year?

Six per cent.

You may call this per cent. the *rate* of interest. Usually we speak of it as the *rate*. Carefully write out definitions of the terms principal, interest, and rate.

Suppose the principal to have been six hundred dollars, the time, and rate the same as before, what would have been the interest?

It would have been \$36.

Why?

If three hundred dollars earns \$18 in a certain time, \$600 should earn twice as much in the same time.

Suppose I had kept the money twice as long as I did. How would that have affected the interest?

It would have increased it.

Why?

If I pay a certain sum for using the principal for one year at a given rate, for using the same principal at the same rate for two years I should pay twice as much.

In what other way, Harry, could the interest have been increased?

If you had agreed to pay twice as high a rate as you did, the interest would have been twice as great.

Then what three things determine the amount or size of the interest?

The amount of the principal, the time for which it is loaned, and the rate that is paid for its use for one year.

As soon as the pupils have clear ideas of the terms used in interest follow the order of work as given below:

1. Demonstrate the fact that the removal of the decimal point two places to the left in the principal represents the interest on any sum for one year at 1%.

2. Compute interests on given principals for one year at any given per cent. by multiplying the interest at 1% by the given per cent.

3. Compute interests on any given principal for any number of years and fractions of a year at any rate, by multiplying the interest for one year at the given rate by the number of years.

NOTE.—If the time element interest can be reduced to fractional part of a year by pupils, the three steps taught above make it possible for the pupil to solve any problem in computing plain interest, though not always in the shortest way.

The pupils may be trained to perform problems in interest by the use of the "straight line" formula, after they understand the work under the third heading.

Principal  $\times$  time in years  $\times$  rate = interest.

P.  $\times$  T.  $\times$  R. = Int.

Find the interest of \$300 for 3 yr., 8 mo., 15 days at 7%.

$$\frac{\$300 \times 89 \times 7}{24 \times 100} = \$77.875.$$

Pupils readily take to this method of solving examples in interest and in most problems it is as short a way as may be devised.

The solution of the so called "problems in interest," consisting in finding one of the missing factors in the interest product, is best reached by the use of this formula.

What rate for three years with a principal of \$600 will produce an interest of \$72?

$$\$600 \times 3 \times ? = \$72.$$

In how long a time will \$720 at 7% gain an interest of \$36?

$$\$720 \times ? \times \frac{7}{100} = \$36.$$

What principal in 3 yr., 6 mo., at 7% will gain an interest of \$48?

$$? \times \frac{7 \times 15}{2 \times 200} = \$48.$$

Another good method in interest:

Compute the interest on \$840, for 2 years, 3 months, and 18 days, at 9%.

The interest on any sum of money for two months at 6% is  $\frac{1}{10}$  of the principal.

\$8.40 = int. on principal for 2 months at 6%.

\$100.30 = int. on \$840 for 2 years at 6%.

\$4.20 = int. on \$840 for 1 month at 6%. ( $\frac{1}{2}$  of \$8.40.)

\$2.10 = int. on \$840 for 15 days at 6%. ( $\frac{1}{2}$  of \$2.10.)

\$ .42 = int. on \$8.40 for 3 days at 6%. ( $\frac{1}{20}$  of \$4.20.)

\$115.92 = int. on \$840 for 2 yr., 3 mo., 18 da., at 6%.

\$57.96 = int. on given principal, for given time at 3%.

\$173.88 = required principal.

As this work of finding the partials that make the whole is all done mentally, the work is done quickly. It is called the "sixty day" method.

## Child Study.

By Dr. G. STANLEY HALL.

A part of an address by Dr. G. Stanley Hall, at Saginaw, Mich. Supt. Whitney introduced Dr. Hall by saying that three years ago at Toronto an audience of five thousand people just about to leave the hall were stopped instantly by being told that Stanley Hall was going to speak.)

We are living in a period which is the harvest home of man's soul. For what is so worth living for and working for as children! What greater object than to transmit the torch of life undimmed from parent to child, from teacher to children. An Italian investigator has found that the age which produces the best fathers is between 30 and 40, and the best mothers between 25 and 35 years.

Let the children cry. The child that never cries is deprived of one of the most essential parts of its birthright. It is the chief exercise that a young child gets; it helps digest its food, makes good blood, causes circulation of the blood, strengthens the voice, etc. Every emotional expression is really developed from these various cries.

Keep a life-book or record of the chief incidents and traits of the child.

Put down the doubts, fears, and virtues of the child. On the child's leaving home it could be presented to him, and would be a sailing chart for his whole life. It will also be a bond of union and cement parental love and affection.

The first thing to teach the young child is the boundaries of its ego. To learn self is the first step of philosophical knowledge. Children as old as twenty-seven months have been seen to offer food to the toe, or to inflict injury upon themselves, etc. The first duty is to open the senses. No one ought to be deaf to music or color blind. Such cases are due to some defect in education. Open the eye-gate, the ear-gate, the touch-gate, all these gates of the senses. Before adolescent years is the age for sensory impression.

The next thing is to teach habit. Don't reason with a young child. To appeal to it is to appeal to a little animal. Instincts and feelings are the contents of a young child's soul. What it wants is habituation. Healthy habits are the basis of right conduct. The habit of prompt obedience should be carried well up into the teens.

One of the chief discoveries of philosophical research is that we know the chief function of thought is to distribute energy. The senses must be closely associated and work together, and there is where we bring in the connection of thought. The child repeats the history of the race—the history of animal life from the dawn of life down to the present day. The child is the epitome of the world. He becomes the master-key that unlocks all mystery.

If the tadpole's tail were cut off before its time to drop off, there would not be the proper development of the legs, so children love all forms of superstition, and if deprived of the fairy-stories and not allowed the play of fancy they suffer in their future development. The natural child has a kinship with animate and inanimate objects. He is *en rapport* with everything.

The age of puberty is the golden period when health is made or marred. Health is holiness, the greatest blessing man can have. What shall it profit a child if he gain the whole world of knowledge and lose his own health? It were better for a child

to begin as Cadmus began before he sowed those dragon's teeth of letters. In Paris every ward has a physician to examine the school children and send notes to parents concerning them. The same thing should be adopted here. In adolescence is implanted in us that great instinct of love, not to enjoy one's self but to serve others. Yet this very instinct perverted leads to a mean, degraded, premature old age—the product of sin.

One reason that our children and young people are lacking in natural spirits is because they know nothing of nature. They have no communion with nature, shut up in cities as they are, and so lose that sympathy which should exist between them and nature. Why in examining children in Boston we found that a large proportion of them did not know where butter and milk and hides come from. They did not know what a cow was, and 71 per cent. of them did not know where beans came from. They didn't know beans even in Boston.

We have peculiar problems to contend with, because we are the most mongrel race in the world, the chief feature of which is that it makes the period of adolescence shorter, and the fever hotter. We must hold our youth to higher ideals, to that poise so essential to health. The best curative for incipient nervous disorders is rhythm. The mother of rhythm is God.

Child study promotes freedom and individuality, is adapted to bring out the woman power, forms a new bond between the parent and school, and is a method in which all can co-operate. The glory of the child is unity with itself and external nature. The glory of the teacher is unity with nature and the child.

## Nature Study in June.

By SARAH L. ARNOLD.

"What is so rare as a day in June?  
Then, if ever, come perfect days,  
Heaven tries the earth if it be in tune,  
And over it softly her warm ear lays."

Read "The Vision of Sir Launfal," now. Read it and re-read it until the beautiful words sing themselves over and over in your thought as you come and go. Read it until the spirit of the poem abides with you. Then read it to the children, large or small, old or young, and see if they, too, are held and charmed by its music and its beauty. You may well rejoice if it falls to your lot to fasten this marvel of song and sunshine to these sweet June days,—in the thought of a child.

June, in the school course, is the month of endings. Reviews are now in order. The dropped stitches must be taken up, the weak places strengthened. How easy, now, in the midst of hurry and striving, to drop the nature study and work with redoubled zeal and new tension upon "the essentials." Ah, this is the very month when the nature study is essential. This is the time when we need to turn from our hurry and worry to learn "the peace at the heart of nature." Do not be deceived into believing that the "results" in arithmetic and grammar are in direct ratio to the minutes spent upon those subjects. Learn to work slowly in June. Take time to breathe, for soul as well as body. Now, even if never before, bring the blossom, the poem, or the song to inspire you to renewed endeavor, in quietness and confidence. Truly, the geography and grammar and arithmetic will be the gainers by this course.

In the old farmer's almanac, we used to read the legend—economically fitted into the spaces at the side of the page. "Look out for high winds this month"—or other advice of kindred nature, trailing down the page. In June, look out for original individual work. Your pupils have observed under your careful guidance thus far. You may not realize how far their expression has been simply an echo of your own. Now, in this month of plenty, ask them to bring in their own specimens, and tell or write about them. Welcome the horse-radish bottles which serve as life preservers for the wilted dandelion or the fainting clover. Submit to "collections" of leaves, twigs, and blossoms. Listen with sympathy to reports of excursions and discoveries. See what the children can do for and of themselves. Leave room for choice in assigning work. The children are to bring some flower growing near home, some weed from the garden, or the blossom they love best. Each should have some opportunity to show his specimen and tell all he can about it before he is helped by the teacher or his work supplemented by his mates.

Here are endless opportunities for drawing, for language, and in the older classes for reading. The search for flowers will lead to little walks or longer excursions which may be described in writing by the pupils. A good theme for composition this. Do not omit the field lesson.

Give some time this month to the observation of the seed-making. Watch the dandelion, the buttercup, the violet. What part of the plant becomes the fruit? What changes do you observe? What happens to the other parts of the flower?

Have an eye to the bees, too? What is their business in the flower cups? What blossoms do they visit? What do they carry away?

There is time, too, for a word about our friends the caterpillars

—with their wonderful houses, both social and single. Who knows the mystery of the caterpillar's nest and the cocoon? Observe a family.

June is the time for birds, too, "Gladness on wings," everywhere about us. What boy has a story of nest building which he has watched but not hindered? What girl knows the robin's nest in the apple tree, or the lark's in the meadow?

Are there gardens at home? Then they have a history to be recited, perhaps as interesting as "Warner's Summer in a Garden," and, while gardens are uppermost, read to the children parts of Mrs. Ewing's beautiful story of "Mary's Meadow."

If you have a public day in June, gather together the children's work in nature study for the year, and arrange a simpler program. Let every child describe his favorite flower, or recite some memory gem. Let June songs be sung, and flower myths read. Read the descriptions of trees studied, of plants observed, of seeds planted. Decorate the room with June flowers, and sing their praises. The work need be only a gathering together of the year's lessons. You will find the results greater than you knew.

Now, one word for July and August, and I am done. Let them be vacation months, with the fullest rest and the largest interests, that give new life. But whatever happens, find some time to be alone, by brook or tree, mountain or sea. And while you absorb something of the quietness and strength that come of nature's teaching, you will lose the care and tension which have made work hard and heavy. To one and all a happy vacation!

## N. E. A. Notes.

The latest news from Denver is that preparations are made for a large company of people; the *Eastern* people especially are wanted. The warmest kind of a welcome is to be given to the *Eastern* people, because Denver was founded by them. But let every one that is going lay out his plans: (1) Write to Fred. Dick, Denver, to secure your hotel or private house, state your rates and when you will arrive; it will be done. (2) Plan your route; don't start too late; better be in the town a day in advance. (3) Plan if you can your excursions; two of these are free; others at small cost. (4) Plan to stay in Colorado and camp—you can do so at the same expense, you can board \$5 to \$8 per week. Remember camping is one of the charming features of this Denver region; there is no rain; you can sleep in tents.

Lastly, write as above what you want and get a reply.

All who desire to attend the N. E. A., at Denver, and the New York State Teachers' Association, at Syracuse also, can buy tickets via West Shore Railroad, and stop off at Syracuse—tickets good to September 1. This is important to note. Remember a company will be formed by Mr. C. W. Bardeen to go to Denver from Syracuse. See the advt.; also write him.

In connection with the N. E. A. it is designed to hold a round table conference of the teachers of natural science of both collegiate and secondary schools. Eminent teachers of national reputation will be present at the Round Table Conference. There will also be exhibitions of scientific apparatus, methods, etc., etc. It is hoped that the interest shown and the discussion elicited, as well as a good attendance on the conference, will justify the application for the organization of a department of science teachers in the N. E. A.

In this prospective department lies a great opportunity for the co-operation of the teachers of collegiate and secondary schools. Such a department will effect the articulation of lines of work which are one in nature and aim, and which should be brought into close touch.

The hearty co-operation of all teachers in any way interested in this line of work is requested. It is suggested to bring for exhibition any novel material in the way of new apparatus, charts, methods, etc., etc., which will be of popular interest and practical value to fellow teachers.

Announcement of intention to attend should be made by writing to anyone of the following Colorado Local Committee.

Chas. Skeele Palmer, Ph. D., University of Colorado, Boulder.  
Chas. J. Ling, B. S., Manual Training High School, East Denver.  
Wm. Triplett, Superintendent of Schools, Golden.  
H. V. Kepner, A. B., High School, South Pueblo.  
A. J. Floyd, High School, Greeley.

## GOOD NEWS FOR CYCLISTS.

Teachers in various parts of the country who use wheels and know from personal experience the delights thereof will be glad to learn that special provision is making for their enjoyment of those delights during the meeting of the N. E. A. in Denver this summer. That Colorado is a paradise for cyclists is abundantly proved by the fact that four-fifths of the gentlemen and one-third of the ladies teaching in the Denver schools ride wheels. These teachers have formed a wheel club and are making arrangements to give their visiting "brethren and sisters" an opportunity of seeing Denver and the surrounding country in that exhilarating way which cyclists only can appreciate. The roads in the vicinity



of Denver are unparalleled in excellence for cycling.

A room has been provided in the Denver high school which will be headquarters for the club and their visitors during the week of the association. Daily runs to various points of interest will be arranged; long runs and short runs, morning runs and evening runs. These will be taken at such times as not to interfere with the meetings of the association, and will be under the guidance of some member familiar with the route to be traversed. It is hardly necessary to say that these and all other services which the club may be able to render to visitors will be entirely gratuitous.

Some of the places to be visited are Fairmount cemetery, which gives a magnificent view of two hundred miles of the Snowy Range; the U. S. military post of Fort Logan, where one can inspect all the discipline and duties of the soldier in garrison and camp; Morrison and Golden, in the foot hills, reached by traversing fertile valleys, which will be a revelation to Eastern visitors; besides Littleton, Brighton, Montclair, University Park, Windsor Farm, and many charming rides in the city of Denver itself.

Those who indulge in "century runs" and are fond of making records, will find Bear Creek cañon, Turkey Creek cañon, Boulder, Longmont, Greeley, Fort Collins, Estes Park, Palmer Lake, Colorado Springs, Manitou, Ute Pass, Green Mountain Falls, Manitou Park, Perry Park, Pueblo, and Cheyenne to be goals commensurate with their ambition and endurance. Indeed, a leisurely trip on a wheel is a most delightful way to see many parts of the state. All needed information as to runs, excursions, and localities will be furnished at the headquarters of the club in the Denver high school, where it is hoped that all "pedaling pedagogues" attending the association, whether ladies or gentlemen, will report and register. The club earnestly wishes to do all in its power to make their visit pleasant, and urges all visiting cyclists to bring their wheels with them.

Any one desiring further information may obtain it by corresponding with Sydney F. Smith, Denver High School; Miss Fannie Hall, Hyde Park School; or Miss Jennie T. Ford, Whittier School.

Supt. B. C. Gregory, of Trenton, N. J., has organized a novel excursion to the Rocky mountains, for the New Jersey teachers and others, to be taken at the time of the National Association. The party will leave New Jersey July 5, and travel to Denver by the Burlington route, where they will remain during the session of the association, and on Thursday evening, July 11, leave Denver for a trip through Central, Southern, and Western Colorado, and through Utah for Salt Lake City. Pausing at the Mormon metropolis long enough to visit the lake and see the city, the party will return via the broad gauge division of the D. & R. G. R. R. through Central Colorado to Denver, and thence home via Burlington route through Southern Nebraska, Kansas City, and St. Louis. The trip will take sixteen days. A unique feature of the excursion is the fact that the party will travel from New Jersey to Salt Lake and back to New Jersey in its own Pullman sleepers, which will be the home of the party wherever it may go.

The trip will be exceedingly economical, the cost of the sleeper for the whole trip being less than the ordinary rate to Denver and back. The expense of the trip, including everything, can easily be brought within \$125.

#### Tours to the North via Pennsylvania Railroad.

To provide the most attractive method of spending a summer holiday, the Pennsylvania Railroad Company has arranged to run two delightful tours to the North. The points included in the itinerary and the country traversed abound in nature's beauties. Magnificent scenery begins with the journey and ends only with its completion.

The names of the places to be visited are familiar to all and suggestive of wonderland. No matter how much may be expected, one cannot be disappointed in Watkin's Glen, Niagara Falls, Thousand Islands, Quebec, Montreal, Au Sable Chasm, Lakes Champlain and George, Saratoga, or the Highlands of the Hudson. The dates fixed for the departures of these two tours are July 16 and August 20, and the round trip rate of \$100 from New York, Brooklyn, Newark, Trenton, Philadelphia, Harrisburg, Baltimore, and Washington, will cover all necessary expenses during the time absent. A beautiful descriptive itinerary can be procured from the tourist department of the Pennsylvania Railroad, 1166 Broadway, New York, or Room 411, Broad Street Station, Philadelphia.

#### Young Mothers

should early learn the necessity of keeping on hand a supply of Gail Borden Eagle Brand Condensed Milk for nursing babies as well as for general cooking. It has stood the test for thirty years, and its value is recognized

THE SCHOOL JOURNAL, published weekly at \$2.50 per year, is the best paper for school boards, superintendents, principals, and all teachers who want to know of educational thought and movements. The news concerning new buildings, the additions of departments of music, drawing, gymnastics, etc., will be of great value. Already a number of teachers have, by consulting these notes, laid plans for better remuneration.

THE TEACHERS' INSTITUTE, at \$1.00 per year, is par excellence the educational magazine of the country; for teachers who want the best methods, and to grow pedagogically, this is the paper.

THE PRIMARY SCHOOL, at \$1.00 per year, is a right hand of help for the teacher of young children.

EDUCATIONAL FOUNDATIONS, at \$1.00 per year, is for students of pedagogy. It discusses the History, Principles, Methods, and Civics of Education, and Child Study.

OUR TIMES contains the news of the month arranged for use in school, 30 cents a year. E. L. KELLOGG & Co., 61 East Ninth Street, New York.

## Editorial Notes.

The "15 Committee Report" is certainly the educational event of the year. The "10 Committee," marking out a course for the high school, hardly produced a ripple when they reported. And fifteen or even ten years ago a program could have been prepared and not a sound of approval or disapproval would have been heard. But things and times have changed. A good many now are able or think they are able to frame out a program for the elementary school which means the primary and advanced primary schools. The *Forum* has an article and probably a hundred newspapers have considered the program and its arguments.

THE JOURNAL has referred to the "15 Report" in several numbers; it now suggests that every superintendent and principal should begin to ask himself, What is an Ideal Program or Course for the Elementary School? It is easy to criticise Dr. Harris in the report submitted, for it is essentially from his pen, but let us see the course you would lay out in its stead. Certainly the course recommended is that of a bold man; few teachers who have been in the field for twenty-five years still preserve their freshness like Dr. Harris. He brings to the task before him not simply his past opinions, but a determination to look at the matter philosophically, past or no past.

Let the teachers read to their high school pupils the words of Chauncey M. Depew in his address before the University of Chicago lately:

"It has been my lot in the peculiar position which I have occupied for over a quarter of a century of counsel and advisor for a great corporation and its creditors, and of the many successful men in business who have surrounded them, to know how men who have been denied in their youth the opportunities for education feel when they are possessed of fortunes and the world seems at their feet. Then they painfully recognize their limitations; then they know their weakness; then they understand that there are things which money cannot buy, and that there are gratifications and triumphs which no fortune can secure. The one lament of all those men has been, 'Oh, if I had been educated! I would sacrifice all that I have to attain the opportunities of the college; to be able to sustain not only conversation and discussion with the educated men with whom I come in contact, but competent also to enjoy what I see is a delight to them beyond anything which I know.'"

The "bicycle editor" is asked to speak and call attention to these wonderful skies and stimulating breezes and the roadbeds, hard and smooth after winter's snows and thaws, and budding nature on either hand, as the bicyclist speeds on in his airy chase of health and inspiration. It is done cheerfully—and the pedagogical editor utters no protest, but rather applauds the idea. Health-seeking is the first duty of the conscientious laborer in any occupation whatever. It is especially so with the teacher, whose work involves the breathing of more or less vitiated air and a daily tax upon the nervous system exceeding that incident to almost any other calling. Life-giving, nerve-soothing oxygen is what the teacher needs, and vigorous exercise



of the muscles to offset over-use of the intellect and will in school. Bicycle riding promotes deep breathing and at the same time takes one out of the indescribable dust of cities into regions where deep breathing is an unqualified good. It unifies body and spirit in a pursuit so different from the ordinary avocations of the teacher that she feels, after a ride, as she sinks to luxurious rest, under a sense of *healthy* fatigue, as if she had taken a trip into another world. There is renovation for the hypochondriac and for the nervous invalid in the bicycle—only don't race, and don't over-tax the heart by too much hill-climbing. The utilitarian value of the wheel, too, is not to be overlooked. As a mode of transit its use is constantly increasing. Many teachers, especially in country districts, ride the bicycle to and from school. In most cases a walking skirt is kept at school and worn over the riding skirt or substituted for it during the day.

### What is Literature ?

What is the teacher when we come to literature ? He is supposed to have read a good many books, but does he know good literature ? And if he does not, is he capable of teaching in any broad sense ? Some time since Messrs. E. L. Kellogg & Co., issued a small volume entitled "English Men of Letters for Boys and Girls" and notified the teachers. Quite a number bought copies, but few have written to say whether the volume had any special merit. Copies were sent to various newspapers and it has received an attention accorded to few books of late years.

The tone of all these reviews is that the book has unusual merit. A hundred papers representing all parts of the country speak of the charming style and of the clear portraiture given of Chaucer, Spenser, and Sidney. But why should not the teachers have found this out ? Why was this left to the editor ? Is he so much better a judge ? Ought not the teacher to know good literature when he sees it.

### Leading Events of the Week.

The United States circuit court of appeals sets aside Judge Goff's injunction, in the South Carolina registration case.—The Ecuador revolutionists gain possession of the entire province of Guayas.—The Japanese concede France a port in the Pescadore islands.—Premier Crispi's candidate elected president of the Italian chamber.—Brazil votes \$65,000 to be used in settling the Guiana boundary question with France.—Japan will shortly throw proposals for building warships open to bids from all the great ship-building countries in the world.—A free-silver convention held at Memphis.—A statue of Martin Luther unveiled in Berlin.—About thirty carriages propelled by petroleum or steam power start for a race from Versailles to Bordeaux and return, a distance of 750 miles.—The ships assembling to take part in the opening of the Baltic ship canal.—President Cleveland issues a proclamation to Cuban filibusterers.—The canal through St. Mary's island, providing independent communication for Canada between Lakes Huron and Superior, opened.—Death of Señor Zorilla, the famous Spanish statesman and republican agitator.—Flag day celebrated on June 14.—Opening of the Harlem ship canal connecting the Hudson river with Long Island sound.—Harriet Beecher Stowe celebrates (June 14) her eighty-fourth birthday at Hartford, Conn.—Spain decides to buy nineteen vessels to patrol Cuban waters.—The World's Women's Christian Temperance Convention meets in London.—Macedonian religious complications may cause war between Turkey and Bulgaria.—Czar Nicholas presents the Cross of the Order of St. Andrew's to President Faure, of France.—The London board of trade blames the mate of the *Crathie* for the *Elbe* disaster.—A monument unveiled (June 17) at Louisburg, Cape Briton, to commemorate the taking of the town by New England troops one hundred and fifty years ago.



MARY PROCTOR.

Miss Mary Proctor contributes to this issue an interesting article on "Giant Sun," page 665. Miss Proctor is the daughter of the late Prof. Richard A. Proctor, the great scientist, and she has ably taken up her father's life work. Her first lecture was given during the World's fair at Chicago, at the request of Mrs. Potter Palmer, and since then she has lectured before interested audiences all over the country. She is also a contributor to many scientific magazines.

The colored teachers of the South have organized a bureau of information, and issue a paper called the *Southern Educator*. We cannot congratulate them on this last, as it is an expensive business; the bureau is a good idea, but every bureau doesn't need a long shot."

The *Normal Exponent* leads all the educational papers, as will be seen by examining the April number. It has twelve departments, and each of these has a head, and in the case of the six ladies, we may say a fine head. The six gentlemen in the front row are fine looking fellows. Twelve editors for an educational paper in Los Angeles! We ought to have 500 here in New York.

The reply of Manitoba to the Dominion government's order suggesting that redress be given the Roman Catholics in educational matters and that the separate school system previously in vogue there be reestablished, is a stern refusal on the part of the province to comply with the order.

When the legislature reassembled June 13 the reply was made public. It first recites the remedial order and then submits the following :

"The privileges which by the said order we are commanded to restore to our Roman Catholic fellow citizens are substantially the same privileges which they enjoyed previous to the year 1890. Compliance with the terms of the order would restore Catholic separate schools with no more satisfactory guarantees of their efficiency than existed prior to the said date.

"The said schools were found to be inefficient. As conducted under the Roman Catholic section of the board of education they did not possess the attributes of efficient modern public schools. Their conduct, management, and regulation were defective. So far as we are aware there has never been an attempt made to defend these schools on their merits, and we do not know of any ground upon which the expenditure of public money in their support could be justified.

"We are, therefore, compelled respectfully to state to your Excellency in Council that we cannot accept the responsibility of carrying into effect the terms of the remedial order.

"Objections upon principle may be taken to any modification of our educational statutes which would result in the establishment of one or more sets of separate schools. Apart, however, from the objections upon principle, there are serious objections from a practical educational standpoint. Some of these objections may be briefly indicated.

"We labor under great difficulties in maintaining an efficient system of primary education. The school taxes bear heavily upon our people. The large amount of land which is free from school taxes and the great extent of country over which our small population is scattered present obstacles to efficiency and progress. The reforms effected in 1890 have given an impetus to educational work, but the difficulties which are inherent in our circumstances have constantly to be met."

### It Clings to the Memory.

Every one was proud of the great World's Fair; proud because they lived at a time when, notwithstanding the great financial depression, when banks and business houses were financially wrecked on every hand—notwithstanding such calamities the citizens of every State gathered together the good, the true, and the beautiful, and made of them a gorgeous pageant that outshone even the splendor of the Cæsars with all their ancient Roman pomp and magnificence.

It is worthy of note, too, that in this country where so much effort is devoted to the accumulation of wealth, the nation should pause long enough to build such a magnificent peace offering.

Its memory cannot die with this generation, for every right minded man or woman will have a souvenir of the event to leave to their descendants.

The Souvenir Spoons offered by the Leonard Mfg. Co., 152-153 Michigan Ave., F.F., Chicago, are genuine souvenirs, and at a price that one can afford to pay.

### In Doubt.

It is very aggravating at times to be in doubt. You would like to have a certain thing, and you are hovering, mentally, between yes or no, undecided whether to go ahead or stay behind. Judging from the number of readers of THE SCHOOL JOURNAL who have not as yet sent in an order for a set of World's Fair Souvenir Spoons, there are many in doubt. They cannot quite persuade themselves that ninety-nine cents will buy six spoons that were sold formerly for \$9.00. They argue that there must be something peculiar about the offer, that there is a catch somewhere. To those who thus lag behind, it might be well to say that thousands who have bought them have written their thorough appreciation, and express surprise that the spoons are such beauties. They are really better and handsomer than type can explain, and the offer is a genuine one.

### Description of Souvenir Spoons.

They are standard after-dinner coffee size, heavily coin silver plated, with gold plated bowls, each Spoon has a different World's Fair building exquisitely engraved in the bowl, and the handles are finely chased showing a raised head of Christopher Columbus, with the dates 1492-1893, and the words, World's Fair City. The set is packed in an elegant plush lined case. The entire set is sent, prepaid, for 99 cents, and if not perfectly satisfactory your money will be refunded.

### Why?

The illustration on this page is a photo-reduction of the set of World's Fair Souvenir Spoons offered by the Leonard Mfg. Co., 152-153 Michigan Ave., F.F., Chicago.

The very small sum asked for them, 99 cents, ought to induce every reader to order a set. They are genuine works of art, and make a beautiful collection of souvenirs of the Fair. They are described fully in another paragraph on this page, and thousands of delighted readers have already purchased sets either to commemorate their own visit to the Fair, and keep in the family as heirlooms or to give as presents to the younger members of the family as souvenirs of the donor.

The price for six spoons, 99 cents, is a mere trifle when it is considered that the World's Fair was the greatest ever held.

### Notes from Correspondents.

MARMORA, ONT., CAN.,

May 10, 1895.

Leonard Mfg. Co.,

Dear Sirs:—Enclosed please find 99 cents, for which send

1 dozen souvenir spoons, same as you sent before. I will probably send for more later on. They are nice for presents. Please send through P. O.

MISS PHENIE CAMPION.

TREMONT, IND.,

May 5, 1895.

Leonard Mfg. Co.,

Enclosed please find P. O. Order for which send me four sets of Souvenir Spoons as promised in my letter from you, this day received.

Yours respectfully, MISS IRENE HALL,  
TREMONT, IND., Steuben Co.

The Spoons arrived all right and are very nice.

DENVER, COLO.,

May 15, 1895.

Leonard Mfg. Co.,

Sirs:—Find order for \$5.94, second order for Souvenir Spoons. What premium will you give me if I send you order for third set of Souvenirs? The last order is entirely satisfactory.

Yours truly,  
MRS. J. A. NESBITT, 735 19th Ave.

AUBURN, ME.,

May 15, 1895.

Leonard Mfg. Co.,

Gentlemen:—I sent for a set of Souvenir Spoons for my wife a short time since and you enclosed an offer to make me a present of three sets of spoons, if we would sell six. My wife went out among her friends and sold six in one evening. I enclose money order for \$5.94 for the nine sets of spoons. She thinks she could sell many more among her friends here, and wants to know what you give as presents besides the Souvenir

Spoons. How much longer will the offer last, or rather, how much longer will the spoons hold out? Respectfully,  
EDW. W. BONNEY,  
8 Myrtle St.

DES MOINES, IA.

May 10, 1895.

Leonard Mfg. Co.,  
Chicago, Ill.,

Gentlemen:—I received my spoons yesterday and was quite well pleased with them. I have shown them to several of my friends, and I will send for three sets in a few days, and probably six sets, if the offer will be the same on the last three as the first three Yrs respectfully,  
JOHN BAILEY,  
1400 E. Walnut St.

MONMOUTH, ILL.,

May 15, 1895.

Leonard Mfg. Co., Chicago.

Gentlemen:—I hope to send you an order soon for the six sets of spoons sold by me. I received the set of spoons sent to me, and was very much pleased with them.

Yours respectfully,

Box 883.

MRS. JACOB HAYDEN.

The above are all unsolicited words of appreciation. Read the description of spoons on this page. Send us your order and ninety-nine cents, and if you are not satisfied we will refund your money. Address Leonard Mfg. Co., 152-153 Michigan Ave., F.F., Chicago.

### Summary.

If the reader will glance over the "Description of the Souvenir Spoons" there can be no doubt of the genuine bargain that is offered.

The six spoons in plush lined case will be sent prepaid on receipt of 99 cents by P. O. or Express Money Order. Do not send individual checks. If you are not satisfied with them the money will be refunded. Address orders plainly,

LEONARD MFG. CO.,  
152-153 MICHIGAN AVE., F.F., CHICAGO, ILL.





### "May Festival" of Education.

The Palo Alto County Teachers' Association, recently held in this city, was a very successful and novel meeting; it was called the "May Festival of Education."

The object of the meeting was to bring parents, pupils, teachers, and school directors together, and to bring them into closer touch with good school work. The schools of Emmetsburg, accordingly, prepared an extensive exposition of the work done in all departments of the city schools. The exhibit was held in the high school building and was open each day, and till 10:30 each evening of the festival. Much of the work of the grammar and high school departments consisted of experiments in chemistry, electricity, pneumatics, mineralogy, and physical geography performed by pupils. The general committee sought to have parents, teachers, school directors, and pupils of rural districts visit this exposition.

In order to get the people into town a grand parade of the school children of the county was organized, and five prizes of unabridged dictionaries, and school libraries were offered to the districts that would have the largest per cent. of their school population in the parade. The plan had the desired effect; for, by actual count 1,860 pupils were in the parade, and fourteen out of sixteen townships were represented. The parade was a mile and a half long and was one grand display of banners and American flags together with many wagons, floats, and carriages beautifully decorated, and was witnessed by five thousand people.

It was through the presence of the children that we secured the presence of the parents and directors. The children were escorted through the school exhibit at the high school building, and hundreds of people from the rural districts who had never seen such things as kindergarten work, electrical machines, chemical experiments, and explanations of the steam engine with a working model made in a high school laboratory, accompanied their children and manifested an interest that showed that they themselves felt that their education was faulty indeed as compared with that of the present. It showed plainly that the people will be in favor of higher education if they can only be brought in contact with it. Reports are coming from many schools to the effect that many of the pupils that were here are trying to manufacture apparatus and make experiments of their own. One rural school that has one of our young men for teacher has had him give a lecture on electricity with apparatus of his own construction. His school-room was crowded and many were turned away. On the other hand many requests are coming in that next year we have another May festival, and make an exposition of our school work. Old citizens suggest that we allow other towns to celebrate the Fourth of July, but that we always must keep the May Festival for ourselves.

Four indoor meetings were held for the discussion of educational questions. These were all crowded and the very best of attention was given at all times to the papers and discussions. Is it not the duty of cities and towns that are well equipped with apparatus to interest the people in general in educational matters? Would it not be well for these secondary schools to do all in their power to reach the rural districts and thus help to elevate the character of these schools? Is it not a fact that we must educate the people by some such means if we hope to reorganize our schools according to the ideas of the best educators? And while we as teachers are holding our national and state associations should we not try to do something in the other direction to reach the masses and thus enlist them in the cause?

We have tried it and are happy to say that we believe that all that is necessary is to bring the people together to view the work done and there will be much fruit where now there is lethargy and opposition.

Emmetsburg, Iowa.

SUPT. W. E. D. RUMMEL.

### New York.

Gov. Morton has approved the bill providing for compulsory teaching in the public schools of the effects of alcoholic liquors. The bill has been the subject of much opposition ever since it was first introduced. There have been charges that there was a "job" in the bill in the shape of a scheme to sell certain text-books. Recently, since the bill has been before the governor, the politicians have taken a hand. Warner Miller has been in favor of the bill and has written his indorsement of it to some who have had more or less to do with its progress through the legislature. The bill, according to the views of many educators, will add much useless work to the school instruction and cumber the entire public school course of training. It provides as follows:

Section 1. Sections 19 and 20 of Article XV. of the consolidated school law are amended to read as follows:

Sec. 19. The nature of alcoholic drinks and other narcotics and their effects on the human system shall be taught in connection with the various divisions of physiology and hygiene as thoroughly as are other branches for not less than four lessons a week for ten or more weeks in each year in all grades below the second year of the high school in all schools under State control, or supported wholly or in part by public money, and also in all schools connected with reformatory institutions. All pupils must continue such study till they have passed satisfactorily the required primary, inter-

mediate, or high school test in the same according to their respective grades. All Regents' examinations in physiology and hygiene shall include a due proportion of questions on the nature of alcoholic drinks, tobacco, and other narcotics, and their effects on the human system. The local school authorities shall provide facilities and definite time and place for this branch of the regular course of study. All pupils who can read shall study this subject from suitable text-books, but pupils unable to read shall be instructed in it orally by teachers using text-books adapted for such instruction as a guide and standard, and these text-books shall be graded to the capacity of primary, intermediate, and high school pupils. For students below high school grade they shall give at least one-fifth their space, and for students of high school grade shall give not less than twenty pages to the nature and effects of alcoholic drinks, and other narcotics, but pages on this subject in a separate chapter at the end of the book shall not be counted in meeting the minimum. No text-book on physiology not conforming to this act shall be used in the public schools except so long as may be necessary to fulfill the conditions of any contract existing on the passage of this act.

Sec. 20. In all normal schools, teachers' training classes and teachers' institutes adequate time and attention shall be given to instruction in the best methods of teaching this branch, and no teacher shall be licensed who has not passed a satisfactory examination in the subject, and the best methods of teaching it. No state school money shall be paid for the benefit of any district, city, normal, or other school herein mentioned until the officer or board having jurisdiction and supervision of such school has filed with the officer whose duty it is in each case to disburse the state school money for such school an affidavit made by such officer, or by the president or secretary of such board, that he has made thorough investigation as to the facts, and that, to the best of his knowledge, information, and belief, all the provisions of this act have been faithfully complied with during the preceding school year.

Sec. 2. This act shall take effect August 1, 1895.

State Supt. Skinner, in his brief on the subject, held that the bill was absolutely unnecessary; that it provided for an excess of this sort of instruction; that it interfered with established methods of teaching; that the quality of the instruction was not considered; that it demanded what was already provided; that the penalty was unreasonable; that educators were against it, and that the influences which were behind this measure came from outside the state.

Among those who are on record in opposition to the measure are President Seth Low, of Columbia, President Schurman, of Cornell, Bishops Littlejohn, Potter, and Doane, the New York and Brooklyn boards of education, and the Church Temperance Society.

The annual graduating exercises of the manual training school of Washington University, St. Louis, Mo., Dr. C. M. Woodward, director, took place June 19. A class of between seventy and eighty young men were graduated as skilled artisans or prepared to follow a higher technical education. The manual training school was opened in Sept. 1880, and its first class was graduated three years later. Twelve classes in all have been graduated, and the number of graduates is 550. Dr. Woodward has a list of the graduates, and is able to tell what nearly every one is doing. This classification is as follows: 12 architects, 3 artists, 5 bankers or brokers, 10 book-keepers, 1 carpenter, 95 clerks (1 cashier or stenographer, 35 hardware or manufacturing, 28 railroad or general office, 31 mercantile), 8 commercial travelers, 5 contractors, 2 dentists, 11 draughtsmen (for architects), 42 draughtsmen (for manufacturers or railroads), 19 electricians, 56 engineers (11 civil, with degrees, 16 mechanical, with degrees, 2 electrical, with degrees, 9 mining, with degrees, 27 assisting and 1 steam), 7 farmers or fruiterers, 4 foremen (in factories), 4 foremen (in drafting or designing rooms), 4 insurance, 2 librarians, 9 lawyers, 23 managers (of industrial establishments), 23 manufacturers, 21 merchants, 6 machinists, 1 mechanic, 1 master mechanic of railroad, 12 physicians, 14 real estate or loan business, 91 students (the past year), 29 unknown or unemployed, 14 deceased, 14 counted twice. Total 545.

"Out of the whole number," says Dr. Woodward, "a little more than one-third have entered upon more or less higher education, general or professional in character."

"While we teach what we call carpentry, pattern-making, blacksmithing, molding, and metal-fitting, the list shows but one carpenter, no pattern-maker, no blacksmith, no molder, and eight machinists. Our graduates do not shun any of these occupations; they take hold of them readily and cordially soon after leaving school, but hardly a year passes before they are invited to step into places which pay better and involve more responsibility, and require more mental ability."

The editor of the *Texas School Journal* says of Dr. J. M. Rice, "The one essential thing which he lacks, and for which there is no substitute, is personal experience as a teacher." If we are not mistaken Dr. Nicholas Murray Butler, president of the N. E. A., has had no experience in teaching except in Columbia university, which is quite a different thing from teaching in a primary, grammar, or high school. This, too, is the case, we think, with Supt. Maxwell, who presided over the superintendents at Cleveland. Yet they were chosen for these high positions by the educators. Hence we do not see why Dr. Rice may not be useful as an expounder of pedagogy.

That Tired Feeling is a dangerous symptom; Hood's Sarsaparilla will overcome it.



## New Books.

A very interesting volume on the *Educational Ideal* has been written by James P. Monroe; it is to outline the development of education. It is a territory not fully explored, as the author rightly says, and he is to be congratulated upon entering it instead of threshing out the old straw, as is usually done.

What is education? is a question that is often asked in order to give a definition. This question if asked at ten or twenty periods in the world's history would at each time have had a different answer. It is a very great question and cannot be answered in a single sentence and if so answered must demand more after the lapse of a few years. Education is really the revelation of man to himself, but this revelation is only partially made at any time, and so our comprehension of education is and must be partial.

It is only in these modern days that education has been considered as a subject worthy of the philosopher. Once it was supposed to be the work of the master or dame who imparted the ability to read; the work of the man who enabled the student to read the Latin and Greek languages. But the construction of chemistry into a science, likewise botany, astronomy, physiology, led to the belief that psychology, the play of the mental forces, was also susceptible of being understood; the development of the human mind became the object instead of the conning of words, the jargon of philosophy, the force of knowledge, the pedantry of words.

In this effort to enable the mind to understand its surroundings, instead of sitting on a perch like a blinking owl, as was proposed in the Middle Ages, several men have distinguished themselves as leaders; they are Rabelais, Bacon, Comenius, Montaigne, Locke, the Jansenists, Fenelon, Rousseau, Pestalozzi, and Froebel.

The best of the knowledge that Greece and Rome had been able to gain was retained; the university was enlarged and expanded; this was the first effort. Bacon brought in the rule that it is not the Past but the Present that must determine the problems of to-day; as each day comes, new facts come and these must be embraced under the rule proposed. The era of Bacon inaugurated a marked advance in pedagogics. Comenius was the genius who could put Bacon's philosophy into the hands of the teacher; it was he who conceived the public school and marked out a course of study. First, to have his mother's care up to six years of age; then in the elementary school for six years, then in the high school for six, in the university for six.

Montaigne and Locke both considered a training of the senses as indispensable; health they considered as an object nature aims at; a mark of the new thought concerning education was that nature must have her way. The Jansenists and the Jesuits made their final aim religion.

Rousseau exerted an influence that has not yet culminated. Nature is the source of education; she possesses a developing power; we are to allow her to exert her influence and aid it. Freedom, happiness, and action—these are his means of education; education will certainly follow, but not the education of the schools. A new era in education was begun by the utterances of this strange, wild, paradoxical genius, and the progress made

during the past hundred years has been along the lines he indicated.

Pestalozzi was the student of Rousseau; had the latter not lived the former had not been vitalized; he undertook to put the beliefs of Rousseau in practice. Froebel was the interpreter of Pestalozzi; he would surround the child with an atmosphere of sympathy and understanding. The aim of Froebel is but partially understood; his real aim is to promote the unity of the soul with its Creator. (D. C. Heath & Co., Boston. \$1.00.)

The long expected *Complete Geography*, by Alex. E. Frye is out, and like the primary book possesses many attractive features. This geography appeals to the eye through an abundance of pictures and maps even more strongly than the elementary book. Nearly all the pictures in the book were engraved directly from photographs, fully as much time being given to this matter as to the text itself. The aim has been to present characteristic forms that are educative. So far as the text is concerned, it may be said that the physical department has been given the most importance, as being the basis of all other knowledge of the earth; this is treated at great length, continent by continent, and the illustrations are scattered through the pages with a profusion that is surprising, there being a half dozen or more sometimes on a single page. There are also relief maps of continents and parts of continents, maps of the winds, tides, ocean currents, storm centers, etc. Races of men, plants and animals are considered at considerable length with the same wealth of illustration, and special attention is given to commerce and industry. The commerce and related industries of the United States are illustrated by twenty-two colored maps prepared especially for this work. These show at a glance just what parts of the country are noted for certain industries, as sheep raising, fisheries, coal, iron, silver, gold and copper mining, etc. The maps represent all the countries of the world on a fairly large scale, with recent political changes clearly marked out. A page of small maps shows the progress of historical knowledge. But it is impossible to mention all of the features; a further notice of the book may be given later. (Ginn & Co., Boston.)

### TEACHERS

Contemplating a trip to Denver, to attend the Convention of the National Educational Association, in July, will have all their traveling troubles borne and wants looked after by an agent in charge, if they will join the special excursion, arranged for by Mr. C. W. Bardeen, Syracuse, N. Y., and Charles W. Cole, Albany, N. Y., the Committee on Transportation for Western New York. They will also secure the lowest rates, the finest accommodations, the quickest time, and the best meals.

This special train will leave Syracuse at 4 P. M., and Buffalo at 8.00 P. M., on July 1, and arrive at Denver, at 5.30 P. M., on July 5. It will be composed of the finest sleeping cars, and will be run via the West Shore, Nickel Plate Road, and the Northwestern-Union Pacific route.

Special rates have been authorized by all lines to Syracuse and return on the occasion of the Convention of the State Educational Association, July 1, 2 and 3. All teachers in New York State are requested to attend this Convention at Syracuse, and to join the special party for Denver, leaving at 4.00 P. M., July 3.

Teachers purchasing tickets via West Shore R. R. from points east of Syracuse, to the Denver Convention, will be allowed a stop-over at Syracuse to attend the State Convention.

For all particulars as to rates, diverse routes, sleeping car reservations, &c., &c., write C. W. Bardeen, Chairman Transportation Committee, Syracuse, N. Y.; or F. J. Moore, General Agent, Nickel Plate Road, Buffalo, N. Y.

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## VACATION WORK FOR

### TEACHERS

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"THE BLUE RIBBON"

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"RAMBLES THROUGH OUR COUNTRY"

An Educational Geographical Game.

Select the book you wish and send for liberal terms and our new catalogue. Mention this paper.

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of this paper who has not our catalogue of teachers' help, should send a card asking for it. It will tell you how to save time and labor, have a better school, and get a larger salary next year.

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Superintendencies of Public Schools,  
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60 positions between \$1200 and \$1500

Superintendencies,  
140 positions below \$1000

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2 positions above \$2000

High School Principalships,  
6 positions between \$1500 and \$2000

High School Principalships,  
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High School Principalships,  
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Professors and teachers of special branches are especially in demand through our agency. We have a large number of excellent positions in Latin, Mathematics, Literature, History, German, French, Sciences, etc., etc.

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It is well for those who have reached mature years, perhaps middle life, when the recollections of youth are somewhat misty, to study the ways of childhood, for with all their accumulated wisdom they can learn of the little ones. As indicating the spirit in which the study of childhood should be approached we have seen nothing to compare with *Beckonings from Little Hands* by Patterson Du Bois. A fond and sympathetic father, with humility accept the lessons given by his children; he sets out to teach them and finds that they can teach him. Numerous incidents in the life of the children are related with a feeling and pathos that is rare to find. Kindergartners can gain from this book much insight into the character of childhood. The book is illustrated with designs and drawings by the author and with process-work copies from photographs. (John D. Wattles & Co., Philadelphia. \$1.25.)

Larger results will accrue from the study of history by the topical method, in advanced classes, than by the use of a single text-book. Where one book is used the pupil often slavishly commits the language of the author, and hence does not get the benefit arising from the selecting, sifting, and arranging of facts that he does where different authors are consulted. Besides, the different mode of treatment in the volumes gives a chance for discussion and the expression of individual judgment on the part of the pupil. *The Reference Handbook of American History by the Library Method*, by A. W. Bachelor, covering the period from 1789 to 1889, is intended as an aid to this mode of study in secondary schools. Care has been taken in making

the choice of topics, to select only those whose bearing upon the history of the country has been important and permanent. Chronological arrangement has, in the main, been preserved. The topics are furnished with sufficient references to writers on our history to bring out the facts connected with them. (Lee & Shepard, Boston.)

Everett T. Tomlinson has just added another volume to the War of 1812 series, entitled *The Boy Soldiers of 1812*. It continues the story that was so interestingly begun in "The Search for Andrew Field," describing events that occurred on or about Lake Ontario and the St. Lawrence river. Many of the scenes that the author introduces into his story are historical, but there is just enough romance added to make the reality more attractive. The story is free from improbabilities, and it is one that young people will like. (Lee & Shepard, Boston. \$1.50.)

## Literary Notes.

A patriotic song *Our Country, Flag, and Heroes*, whose words were written by Volkmars Johnsen, has been published. The music was composed by Christian Nelson, 561 Madison street, Chicago; he is also the publisher.

*The Relation of Psychology to the Art of Education*, a paper read before the state teachers' association of Florida, by the Rev. J. R. Howard, of Jacksonville, has been issued in pamphlet form.

No. 1 of volume II. of the Religion of Science library is an essay on *The Nature of the State*, by Dr. Paul Carus. It is published by the Open Court Publishing Co., Chicago.



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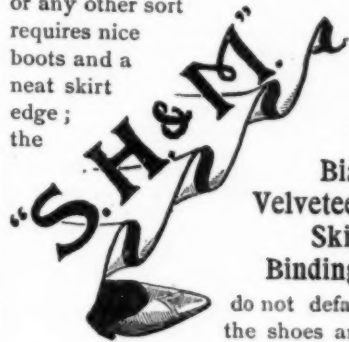
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## Publishers' Notes.

Chicago did not get all the glory of the World's Fair; that great exhibition, although reflecting infinite honor on the metropolis of the West, was the pride of the whole nation. Hence the eagerness to obtain souvenirs, like the spoons offered by the Leonard Mfg. Co., 152 Michigan avenue, F. F., Chicago. Some may think it strange that ninety-nine cents will buy six spoons that were formerly sold for \$9.00; but thousands who have bought them have written their thorough appreciation, and express surprise that the spoons are such beauties. They are standard after-dinner coffee size, heavily coin silver plated, with gold plated bowls. Each spoon has a different World's fair building exquisitely engraved on the bowl, and the handles are finely chased, showing a raised head of Christopher Columbus, with the dates 1492-1893 and the words World's Fair City. The set is packed in an elegant plush lined case.

During the summer vacation, when there is plenty of leisure, teachers of Greek and Latin should take the time to look over thoroughly the list of text-books, in those languages, of the American Book Company. They are numerous, varied, and of a high order of excellence. Over forty eminent scholars have been engaged in the preparation of these books, which represent the best talent and scholarship the country affords. Descriptive lists and circulars will be sent free.

Teachers who attend institutes and summer schools this season will have a chance of inspecting the goods of Milton Bradley Co., Springfield, Mass., for arrangements have been made to have them very extensively displayed. There are materials for teachers of every grade; especially noticeable is the New Process Clay Flour for modeling in the kindergarten, the school, and the studio. But we will not further specify; those interested should send for information.

For the meeting of the National Educational Association at Denver, Colo., in July, next, the Western trunk lines have named a rate of one standard fare, plus two dollars for the round trip. Variable routes will be permitted. Special side trips at reduced rates will be arranged for from Denver to all the principal points of interest throughout Colorado, and those desiring to extend the trip to California, Oregon, and Washington, will be accommodated at satisfactory rates. Teachers and others that desire, or intend attending this meeting or of making a Western trip this summer, will find this their opportunity. The Chicago, Milwaukee & St. Paul Railway (first-class in every respect) will run through cars Chicago to Denver.

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Teachers who intend to attend the National Educational Convention at Denver would do well, before selecting their routes to write to any of the representatives of the Missouri Pacific railway (whose addresses are given in an advertisement in another column) for a copy of the recent publication, "St. Louis Through a Camera," which will be mailed free on application.

## Magazines.

Dr. Andrew D. White has an article on "Beginnings of Scientific Criticism" in *The Popular Science Monthly* for July. It tells how the first few scholars to turn scientific investigation upon the Hebrew Scriptures were suppressed as they rose, and how wider and wider acceptance has been won for their results by the increasing number of their successors. Prof. Sully continues the discussion of "Fear" in his *Studies of Childhood*. He shows that fear of animals and fear of the dark are closely related, the dark being often regarded as peopled with dreadful animals, or as being itself a monster.

*Scribner's Magazine* for July opens with an article on "Athletic Clubs," by Duncan Edwards, which contains nearly forty illustrations of the great clubs in this country, such as the New York athletic, the Crescent, the Chicago, the Olympia of San Francisco, and the Boston. This is the most comprehensive article that ever has been published on that subject.

We have watched with considerable interest the steady improvement in value and attractiveness of *The Literary Digest*. This publication gives just what the busy man has so long needed—a summary of opinions from leading newspapers and magazines on questions in politics, letters and art, science, religion, etc., selected with great judgment and impartiality and well classified. Pictorially and typographically the paper is very attractive.

Teachers of music and others interested in the art will find much for their enlightenment and entertainment in two publications of Novello, Ewer & Co., London and New York.—*The Musical Times* and *The School Music Review*. The former contains besides articles of general value to musicians, a large amount of music, musical news from all over England, correspondence from the continent, etc. *The School Music Review*, as its name implies, is devoted to the interests of the schools and teachers everywhere will find it a most helpful publication. One of the features is the giving of music in the tonic sol-fa and the old notations.

A number of extracts from an amusing Japanese "Life of General Grant" is printed in the *July Century*. The book was written and circulated soon after General Grant's tour around the world, but has become very rare. The author has the highest admiration for the soldier and statesman—this "Heaven-bestowed wise man"—and he expresses it with true Oriental impressiveness. He pictures General Grant at the head of his troops, "shooting a glittering light from the midst of his eyeball, lifting up his sword, raising his great voice like a peal of thunder." The illustrations are characteristic. The "Assassination of Lincoln" represents the martyred president struggling in the grasp of five men with up-raised daggers.

*The Phrenological Journal* for June contains a phrenograph of Charles A. Dana, the veteran editor of the *New York Sun*.

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*The Atlantic Monthly* for July contains the first of Dr. John Fiske's promised historical papers. The subject treated in this issue is The Elizabethan Sea Kings. Such picturesque historical characters as Raleigh, Drake, and others of their time become doubly attractive when described by so charming a writer as Mr. Fiske.

The *Review of Reviews* for June gives an account of the passion play spectacle to be seen this summer at Hôritz, a small town in Bohemia. The performance will be repeated at stated intervals till October.

### Literary Notes.

A new male quartette which has been organized in this city under the name of "The Meister Glee Singers," consists of Fred. Rycroft, counter tenor, of the "Old Homestead" quartette; John M. Fulton, tenor, Grace church, New York; Alfred Hallam, baritone, West End Presbyterian church, New York; Lewis J. Geary, bass, Fifth Avenue Presbyterian church, New York. This quartette is of special interest to the public, inasmuch as it renders, artistically, part songs by Hatton, Bishop, Calcott, Abt, Harsley, and many others, which are written for the male alto voice, and are consequently not within the range of the ordinary first tenor. These part songs are very seldom heard in this country. For terms, etc., address the Meister Glee Singers, Novello, Ewer & Co., 21 East 17th St., N. Y.

The *Review of Reviews* for June contains the following in regard to the book on *Chaucer, Spenser, Sidney*, by Gertrude H. Ely (E. L. Kellogg & Co.): "As befitting a book intended for 'boys and girls,' considerable space in this volume is given to interesting biographical matter, though detailed account is given of the principal works of the authors mentioned in the title—a title not strictly accurate, as some attention is paid to writers between Chaucer and the Elizabethans. The style strikes that tone of genial familiarity which children enjoy, and many will doubtless find in these pages a pleasant introduction to the three great English poets considered. The scholarship of the book seems reliable, though naturally it does not give evidence of great research."

*A Study in Prejudices* is the title of the striking new novel by George Paston, author of "A Modern Amazon." This story, which is described as fresh and modern in conception, is to appear in Appleton's popular Town and Country Library.

The trustees of Union college have authorized the publication of the Butterfield lectures delivered recently at that institution. The first volume will contain the lectures of ex-Gov. Rice, Andrew Carnegie, Henry W. Cannon, Gen. Thomas L. James, Charles A. Dana, ex-Gov. Cornell, Montgomery Schuyler, and others.

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Neither the Committee of Ten nor the Committee of Fifteen had had the privilege of reviewing these books before making their reports.

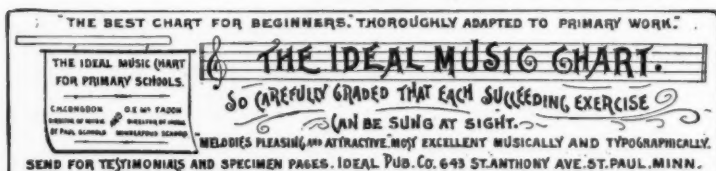
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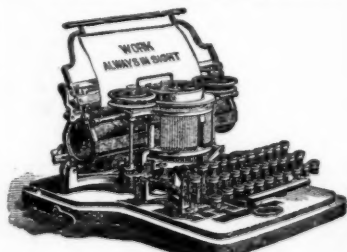
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